Document Name	Brute-Force Post-Mitigation Validation (Windows Server 2022)	Version	1.3
Author	Anusha Ramu Chakravarthi	Date Created	19/04/2025
Attack Type	Brute-Force Testing (Post-Security Hardening)	Last Modified	27/042025

Document Description

This revised runbook is designed to validate the effectiveness of brute-force protection mechanisms implemented on Ubuntu 22.04 after initial testing. These include tools such as Fail2Ban, SSH hardening, WordPress login restrictions, and other mitigations. It aligns with the "Protect" and "Detect" functions of the NIST Cybersecurity Framework.

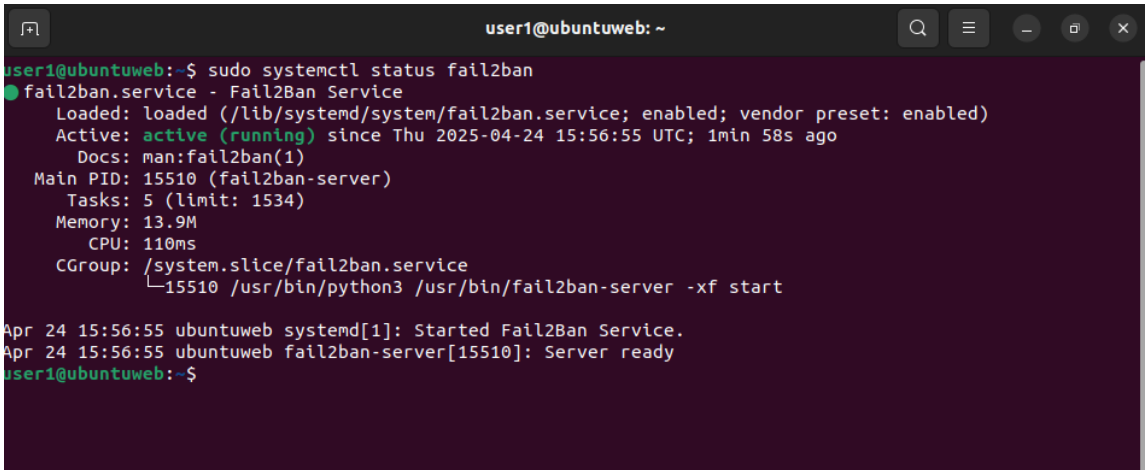
Step 1

Verify Security Controls Are Active

Ensure all configured brute-force protection mechanisms are active.

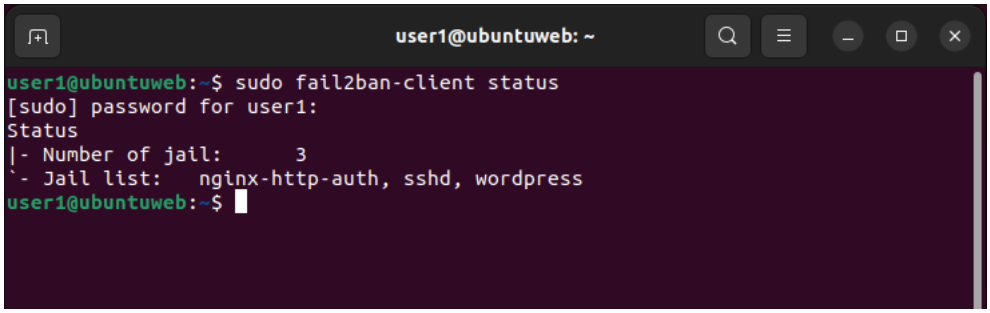
- Confirm **Fail2Ban** is installed and running:

```
sudo systemctl status fail2ban
```



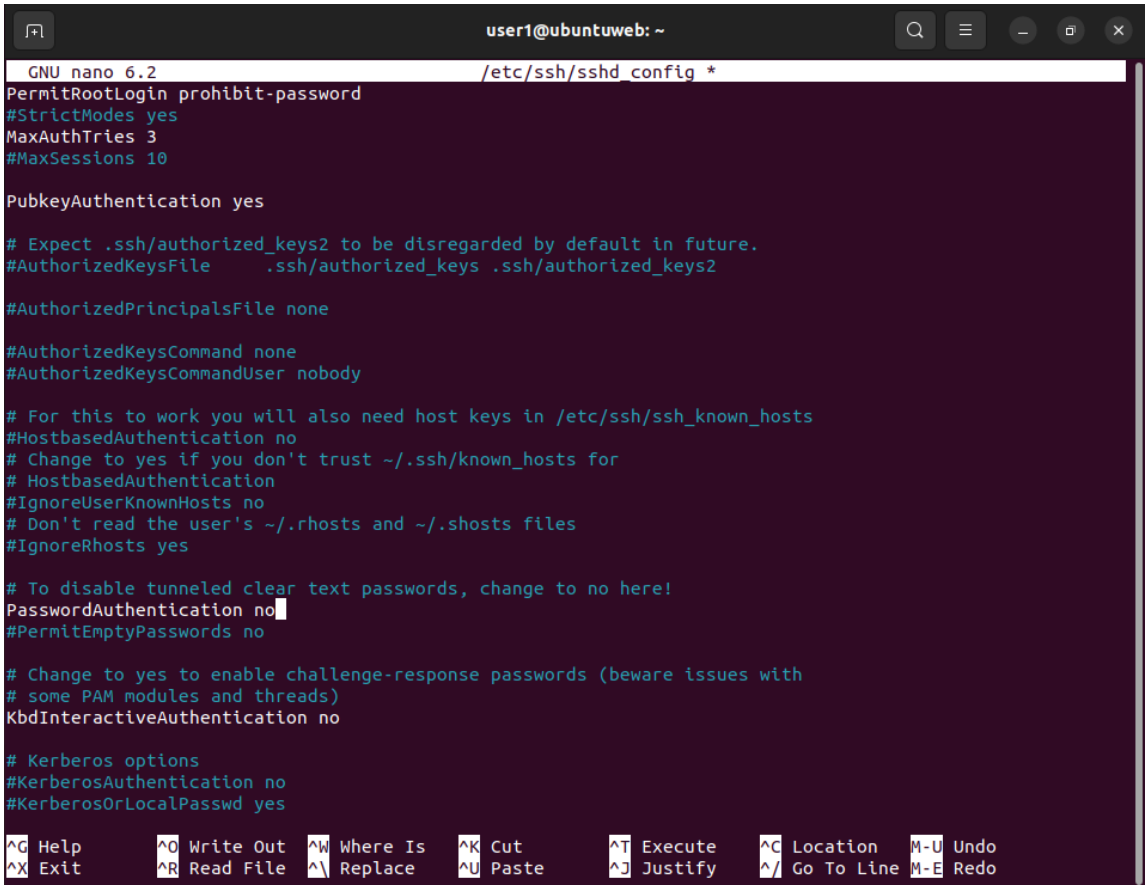
- Verify Fail2Ban jail configuration for SSH and WordPress (apache/nginx).

```
sudo fail2ban-client status
```

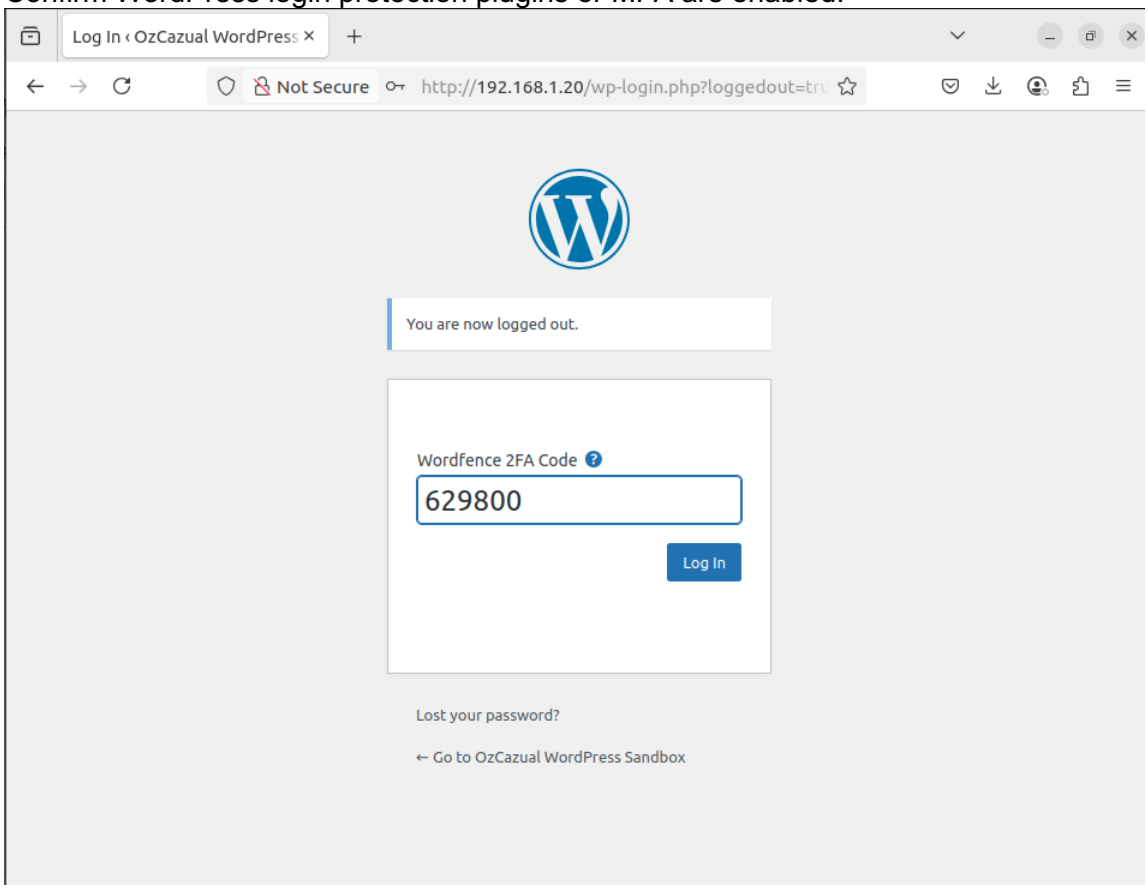


- Confirm SSH PasswordAuthentication is set to "no" (if applicable):

```
sudo nano /etc/ssh/sshd_config
```



- Confirm WordPress login protection plugins or MFA are enabled.



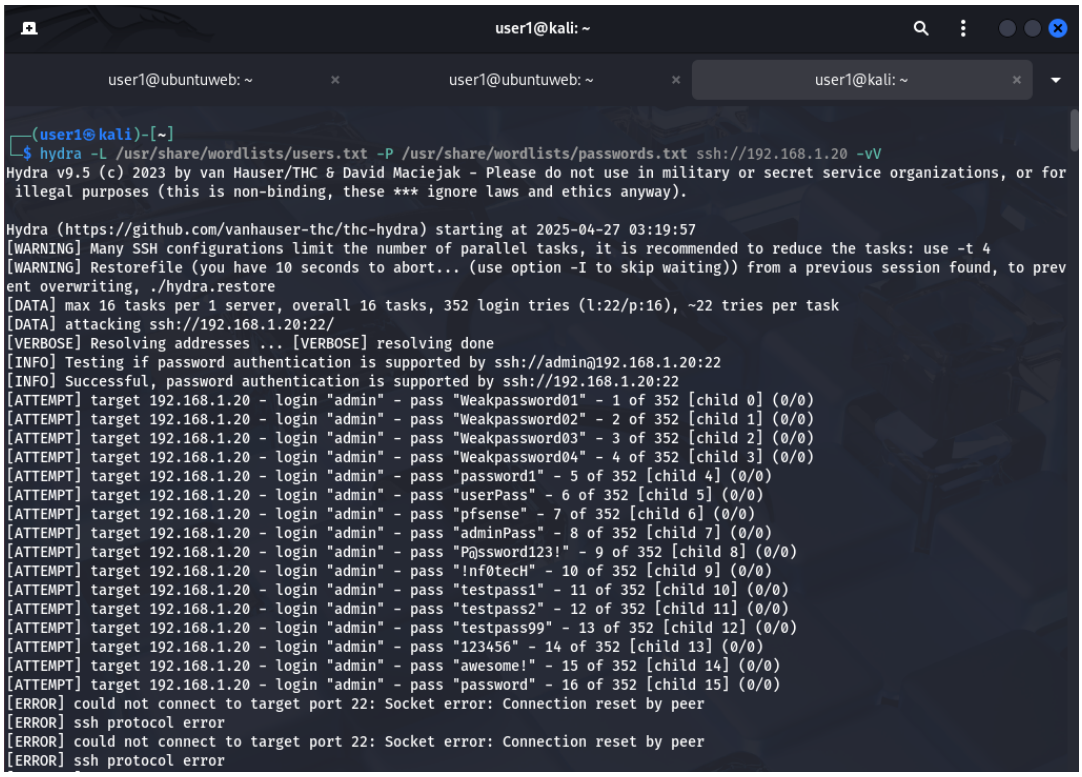
Step 2

Simulate SSH Brute-Force Attack (Controlled)

Run controlled brute-force attempts under the Fail2Ban threshold.

- Use Hydra to perform 3-4 failed SSH login attempts.
- Confirm Fail2Ban does not trigger before threshold is crossed.

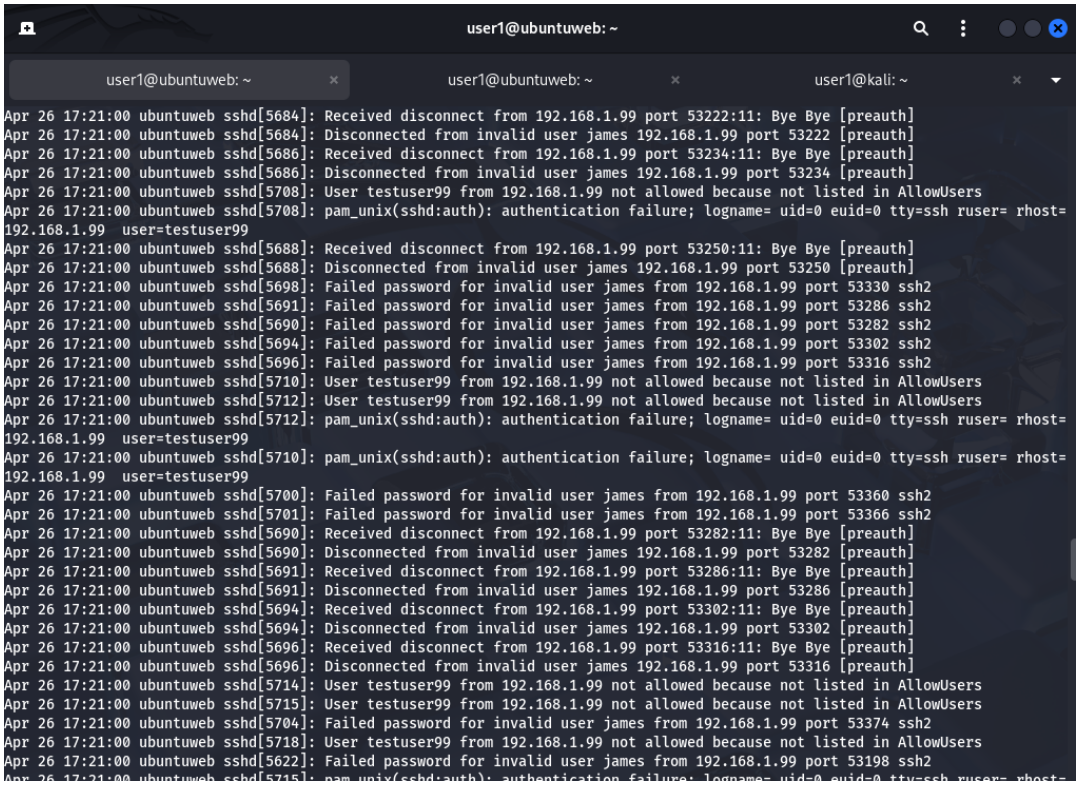
```
hydra -L users.txt -P passwords.txt ssh://<target_IP>
```



```
┌──(user1㉿kali)-[~]
└─$ hydra -L /usr/share/wordlists/users.txt -P /usr/share/wordlists/passwords.txt ssh://192.168.1.20 -vV
Hydra v9.5 (c) 2023 by van Hauser/THC & David Maciejak - Please do not use in military or secret service organizations, or for
 illegal purposes (this is non-binding, these *** ignore laws and ethics anyway).

Hydra (https://github.com/vanhauser-thc/thc-hydra) starting at 2025-04-27 03:19:57
[WARNING] Many SSH configurations limit the number of parallel tasks, it is recommended to reduce the tasks: use -t 4
[WARNING] Restorefile (you have 10 seconds to abort... (use option -I to skip waiting)) from a previous session found, to prev
ent overwriting, ./hydra.restore
[DATA] max 16 tasks per 1 server, overall 16 tasks, 352 login tries (l:22/p:16), ~22 tries per task
[DATA] attacking ssh://192.168.1.20:22/
[VERBOSE] Resolving addresses ... [VERBOSE] resolving done
[INFO] Testing if password authentication is supported by ssh://admin@192.168.1.20:22
[INFO] Successful, password authentication is supported by ssh://192.168.1.20:22
[ATTEMPT] target 192.168.1.20 - login "admin" - pass "Weakpassword01" - 1 of 352 [child 0] (0/0)
[ATTEMPT] target 192.168.1.20 - login "admin" - pass "Weakpassword02" - 2 of 352 [child 1] (0/0)
[ATTEMPT] target 192.168.1.20 - login "admin" - pass "Weakpassword03" - 3 of 352 [child 2] (0/0)
[ATTEMPT] target 192.168.1.20 - login "admin" - pass "Weakpassword04" - 4 of 352 [child 3] (0/0)
[ATTEMPT] target 192.168.1.20 - login "admin" - pass "password1" - 5 of 352 [child 4] (0/0)
[ATTEMPT] target 192.168.1.20 - login "admin" - pass "userPass" - 6 of 352 [child 5] (0/0)
[ATTEMPT] target 192.168.1.20 - login "admin" - pass "pfsense" - 7 of 352 [child 6] (0/0)
[ATTEMPT] target 192.168.1.20 - login "admin" - pass "adminPass" - 8 of 352 [child 7] (0/0)
[ATTEMPT] target 192.168.1.20 - login "admin" - pass "P@ssword123!" - 9 of 352 [child 8] (0/0)
[ATTEMPT] target 192.168.1.20 - login "admin" - pass "!nf0tecH" - 10 of 352 [child 9] (0/0)
[ATTEMPT] target 192.168.1.20 - login "admin" - pass "testpass1" - 11 of 352 [child 10] (0/0)
[ATTEMPT] target 192.168.1.20 - login "admin" - pass "testpass2" - 12 of 352 [child 11] (0/0)
[ATTEMPT] target 192.168.1.20 - login "admin" - pass "testpass99" - 13 of 352 [child 12] (0/0)
[ATTEMPT] target 192.168.1.20 - login "admin" - pass "123456" - 14 of 352 [child 13] (0/0)
[ATTEMPT] target 192.168.1.20 - login "admin" - pass "awesome!" - 15 of 352 [child 14] (0/0)
[ATTEMPT] target 192.168.1.20 - login "admin" - pass "password" - 16 of 352 [child 15] (0/0)
[ERROR] could not connect to target port 22: Socket error: Connection reset by peer
[ERROR] ssh protocol error
[ERROR] could not connect to target port 22: Socket error: Connection reset by peer
[ERROR] ssh protocol error
```

- Monitor /var/log/auth.log.

```
sudo tail -f /var/log/auth.log
```



```
Apr 26 17:21:00 ubuntuweb sshd[5684]: Received disconnect from 192.168.1.99 port 53222:11: Bye Bye [preauth]
Apr 26 17:21:00 ubuntuweb sshd[5684]: Disconnected from invalid user james 192.168.1.99 port 53222 [preauth]
Apr 26 17:21:00 ubuntuweb sshd[5686]: Received disconnect from 192.168.1.99 port 53234:11: Bye Bye [preauth]
Apr 26 17:21:00 ubuntuweb sshd[5686]: Disconnected from invalid user james 192.168.1.99 port 53234 [preauth]
Apr 26 17:21:00 ubuntuweb sshd[5708]: User testuser99 from 192.168.1.99 not allowed because not listed in AllowUsers
Apr 26 17:21:00 ubuntuweb sshd[5708]: pam_unix(sshd:auth): authentication failure; logname= uid=0 euid=0 tty=ssh ruser= rhost=
192.168.1.99  user=testuser99
Apr 26 17:21:00 ubuntuweb sshd[5688]: Received disconnect from 192.168.1.99 port 53250:11: Bye Bye [preauth]
Apr 26 17:21:00 ubuntuweb sshd[5688]: Disconnected from invalid user james 192.168.1.99 port 53250 [preauth]
Apr 26 17:21:00 ubuntuweb sshd[5698]: Failed password for invalid user james from 192.168.1.99 port 53330 ssh2
Apr 26 17:21:00 ubuntuweb sshd[5691]: Failed password for invalid user james from 192.168.1.99 port 53286 ssh2
Apr 26 17:21:00 ubuntuweb sshd[5690]: Failed password for invalid user james from 192.168.1.99 port 53282 ssh2
Apr 26 17:21:00 ubuntuweb sshd[5694]: Failed password for invalid user james from 192.168.1.99 port 53302 ssh2
Apr 26 17:21:00 ubuntuweb sshd[5696]: Failed password for invalid user james from 192.168.1.99 port 53316 ssh2
Apr 26 17:21:00 ubuntuweb sshd[5710]: User testuser99 from 192.168.1.99 not allowed because not listed in AllowUsers
Apr 26 17:21:00 ubuntuweb sshd[5712]: User testuser99 from 192.168.1.99 not allowed because not listed in AllowUsers
Apr 26 17:21:00 ubuntuweb sshd[5712]: pam_unix(sshd:auth): authentication failure; logname= uid=0 euid=0 tty=ssh ruser= rhost=
192.168.1.99  user=testuser99
Apr 26 17:21:00 ubuntuweb sshd[5710]: pam_unix(sshd:auth): authentication failure; logname= uid=0 euid=0 tty=ssh ruser= rhost=
192.168.1.99  user=testuser99
Apr 26 17:21:00 ubuntuweb sshd[5700]: Failed password for invalid user james from 192.168.1.99 port 53360 ssh2
Apr 26 17:21:00 ubuntuweb sshd[5701]: Failed password for invalid user james from 192.168.1.99 port 53366 ssh2
Apr 26 17:21:00 ubuntuweb sshd[5690]: Received disconnect from 192.168.1.99 port 53282:11: Bye Bye [preauth]
Apr 26 17:21:00 ubuntuweb sshd[5690]: Disconnected from invalid user james 192.168.1.99 port 53282 [preauth]
Apr 26 17:21:00 ubuntuweb sshd[5691]: Received disconnect from 192.168.1.99 port 53286:11: Bye Bye [preauth]
Apr 26 17:21:00 ubuntuweb sshd[5691]: Disconnected from invalid user james 192.168.1.99 port 53286 [preauth]
Apr 26 17:21:00 ubuntuweb sshd[5694]: Received disconnect from 192.168.1.99 port 53302:11: Bye Bye [preauth]
Apr 26 17:21:00 ubuntuweb sshd[5694]: Disconnected from invalid user james 192.168.1.99 port 53302 [preauth]
Apr 26 17:21:00 ubuntuweb sshd[5696]: Received disconnect from 192.168.1.99 port 53316:11: Bye Bye [preauth]
Apr 26 17:21:00 ubuntuweb sshd[5696]: Disconnected from invalid user james 192.168.1.99 port 53316 [preauth]
Apr 26 17:21:00 ubuntuweb sshd[5714]: User testuser99 from 192.168.1.99 not allowed because not listed in AllowUsers
Apr 26 17:21:00 ubuntuweb sshd[5715]: User testuser99 from 192.168.1.99 not allowed because not listed in AllowUsers
Apr 26 17:21:00 ubuntuweb sshd[5704]: Failed password for invalid user james from 192.168.1.99 port 53374 ssh2
Apr 26 17:21:00 ubuntuweb sshd[5718]: User testuser99 from 192.168.1.99 not allowed because not listed in AllowUsers
Apr 26 17:21:00 ubuntuweb sshd[5622]: Failed password for invalid user james from 192.168.1.99 port 53198 ssh2
Apr 26 17:21:00 ubuntuweb sshd[5715]: pam_unix(sshd:auth): authentication failure; logname= uid=0 euid=0 tty=ssh ruser= rhost=
```

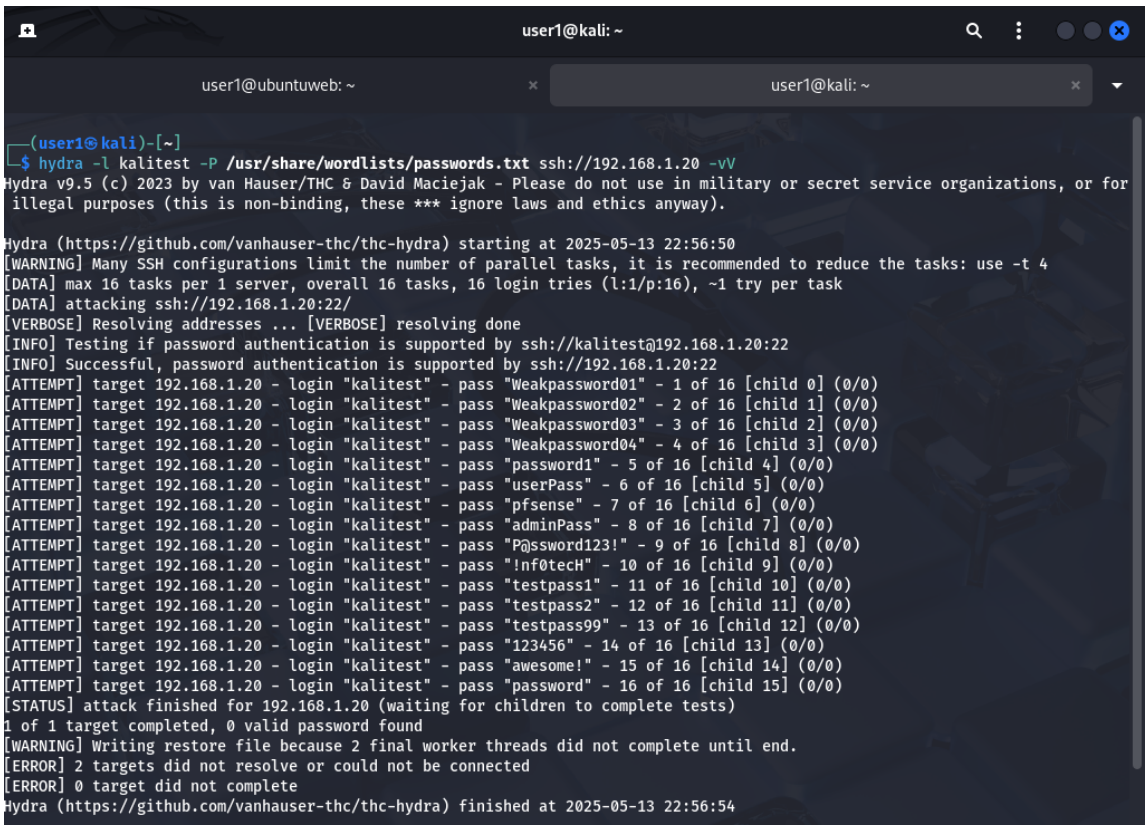
Step 3

Trigger Fail2Ban SSH Protection

Exceed login threshold to verify IP banning.

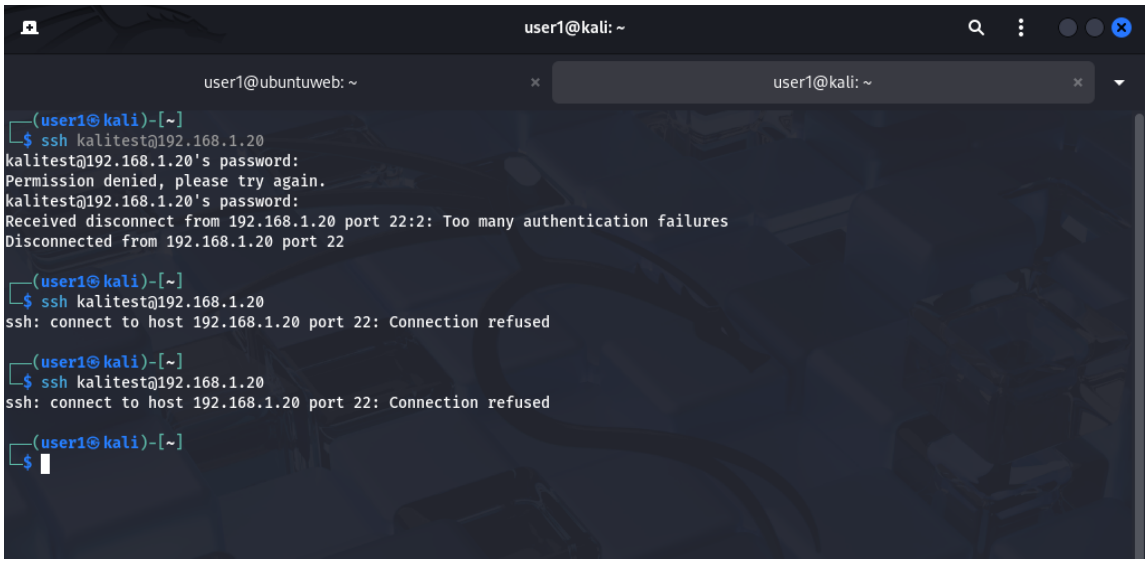
- Use **Hydra** or **manual SSH** attempts to fail logins repeatedly.
  - Using **hydra**:

```
hydra -l <username> -P passwords.txt
ssh://<target_IP>
```



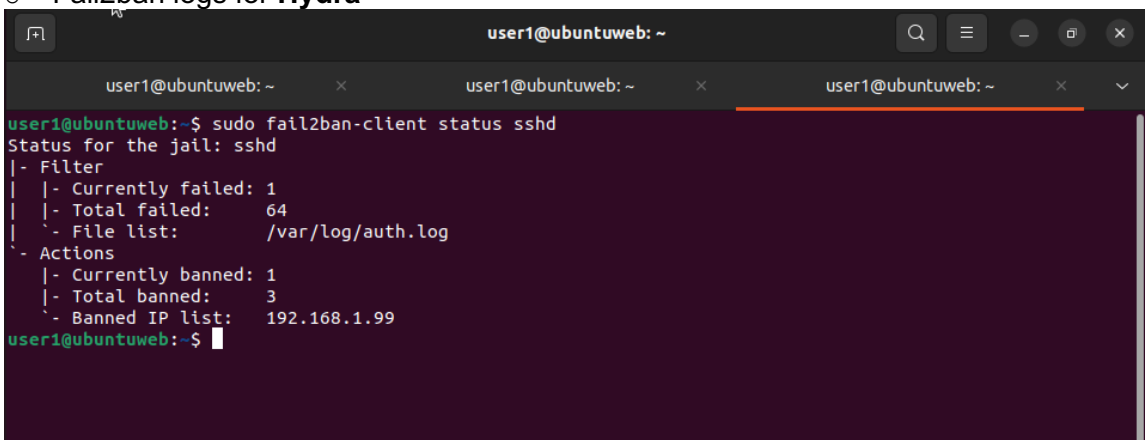
  - **Manual SSH** with wrong user:

```
ssh <username>@<target_IP>
```

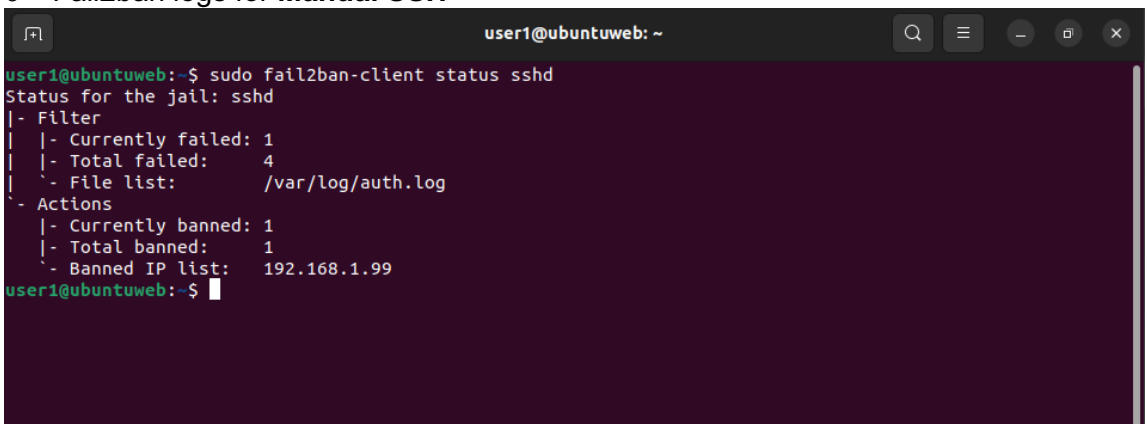


- Check **Fail2Ban logs**:
  `sudo fail2ban-client status sshd`

  - Fail2ban logs for **Hydra**



  - Fail2ban logs for **Manual SSH**



- Confirm attacker IP is banned.

- Check for corresponding logs and system response.

```
sudo tail -f /var/log/auth.log
```

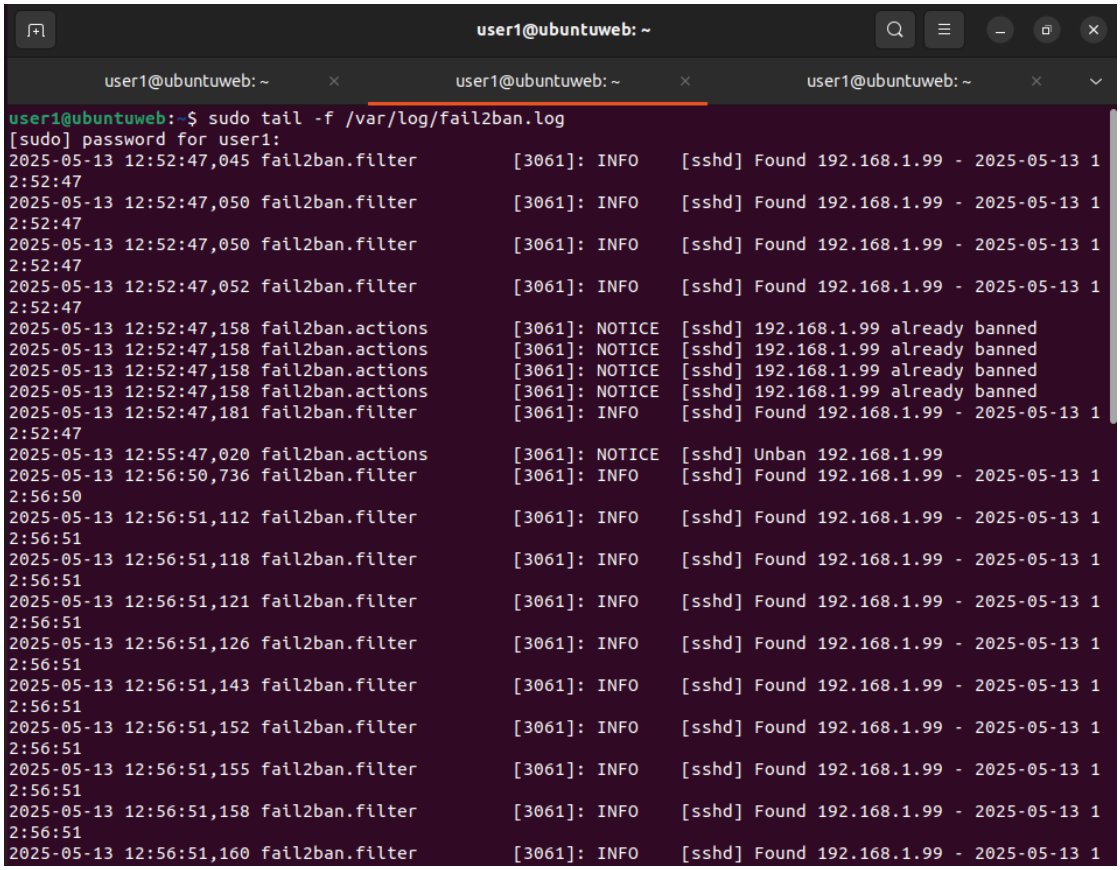
  - System response for **Hydra**

```
user1@ubuntuweb: ~
user1@ubuntuweb: ~    user1@ubuntuweb: ~    user1@ubuntuweb: ~
May 13 12:56:31 ubuntuweb sudo:    user1 : TTY=pts/2 ; PWD=/home/user1 ; USER=root ; COMMAND=/usr/bin/ta
il -f /var/log/fail2ban.log
May 13 12:56:31 ubuntuweb sudo: pam_unix(sudo:session): session opened for user root(uid=0) by (uid=1000
)
May 13 12:56:50 ubuntuweb sshd[1271]: exited MaxStartups throttling after 00:04:06, 3 connections droppe
d
May 13 12:56:50 ubuntuweb sshd[3323]: Invalid user kalitest from 192.168.1.99 port 45936
May 13 12:56:50 ubuntuweb sshd[3323]: Received disconnect from 192.168.1.99 port 45936:11: Bye Bye [prea
uth]
May 13 12:56:50 ubuntuweb sshd[3323]: Disconnected from invalid user kalitest 192.168.1.99 port 45936 [p
reauth]
May 13 12:56:51 ubuntuweb sshd[3334]: Invalid user kalitest from 192.168.1.99 port 46044
May 13 12:56:51 ubuntuweb sshd[3336]: Invalid user kalitest from 192.168.1.99 port 46062
May 13 12:56:51 ubuntuweb sshd[3337]: Invalid user kalitest from 192.168.1.99 port 46076
May 13 12:56:51 ubuntuweb sshd[3333]: Invalid user kalitest from 192.168.1.99 port 46040
May 13 12:56:51 ubuntuweb sshd[3340]: Invalid user kalitest from 192.168.1.99 port 46094
May 13 12:56:51 ubuntuweb sshd[3329]: Invalid user kalitest from 192.168.1.99 port 45994
May 13 12:56:51 ubuntuweb sshd[3332]: Invalid user kalitest from 192.168.1.99 port 46032
May 13 12:56:51 ubuntuweb sshd[3330]: Invalid user kalitest from 192.168.1.99 port 46010
May 13 12:56:51 ubuntuweb sshd[3335]: Invalid user kalitest from 192.168.1.99 port 46056
May 13 12:56:51 ubuntuweb sshd[3334]: pam_unix(sshd:auth): check pass; user unknown
May 13 12:56:51 ubuntuweb sshd[3339]: Invalid user kalitest from 192.168.1.99 port 46090
May 13 12:56:51 ubuntuweb sshd[3336]: pam_unix(sshd:auth): check pass; user unknown
May 13 12:56:51 ubuntuweb sshd[3336]: pam_unix(sshd:auth): authentication failure; logname= uid=0 euid=0
 tty=ssh ruser= rhost=192.168.1.99
May 13 12:56:51 ubuntuweb sshd[3337]: pam_unix(sshd:auth): check pass; user unknown
May 13 12:56:51 ubuntuweb sshd[3334]: pam_unix(sshd:auth): authentication failure; logname= uid=0 euid=0
 tty=ssh ruser= rhost=192.168.1.99
May 13 12:56:51 ubuntuweb sshd[3337]: pam_unix(sshd:auth): authentication failure; logname= uid=0 euid=0
 tty=ssh ruser= rhost=192.168.1.99
May 13 12:56:51 ubuntuweb sshd[3333]: pam_unix(sshd:auth): check pass; user unknown
May 13 12:56:51 ubuntuweb sshd[3333]: pam_unix(sshd:auth): authentication failure; logname= uid=0 euid=0
 tty=ssh ruser= rhost=192.168.1.99
May 13 12:56:51 ubuntuweb sshd[3332]: pam_unix(sshd:auth): check pass; user unknown
May 13 12:56:51 ubuntuweb sshd[3332]: pam_unix(sshd:auth): authentication failure; logname= uid=0 euid=0
 tty=ssh ruser= rhost=192.168.1.99
```

  - System response for **Manual SSH**

```
user1@ubuntuweb: ~
May 13 12:39:06 ubuntuweb sudo:    user1 : TTY=pts/0 ; PWD=/home/user1 ; USER=root ; COMMAND=/usr/bin/na
no /etc/fail2ban/jail.local
May 13 12:39:06 ubuntuweb sudo: pam_unix(sudo:session): session opened for user root(uid=0) by (uid=1000
)
May 13 12:40:12 ubuntuweb sudo: pam_unix(sudo:session): session closed for user root
May 13 12:40:47 ubuntuweb sudo:    user1 : TTY=pts/0 ; PWD=/home/user1 ; USER=root ; COMMAND=/usr/bin/sy
stemctl restart fail2ban
May 13 12:40:47 ubuntuweb sudo: pam_unix(sudo:session): session opened for user root(uid=0) by (uid=1000
)
May 13 12:40:48 ubuntuweb sudo: pam_unix(sudo:session): session closed for user root
May 13 12:41:00 ubuntuweb sudo:    user1 : TTY=pts/0 ; PWD=/home/user1 ; USER=root ; COMMAND=/usr/bin/fa
il2ban-client status
May 13 12:41:00 ubuntuweb sudo: pam_unix(sudo:session): session opened for user root(uid=0) by (uid=1000
)
May 13 12:41:01 ubuntuweb sudo: pam_unix(sudo:session): session closed for user root
May 13 12:42:33 ubuntuweb sshd[3079]: Invalid user kalitest from 192.168.1.99 port 43942
May 13 12:42:41 ubuntuweb sshd[3079]: pam_unix(sshd:auth): check pass; user unknown
May 13 12:42:41 ubuntuweb sshd[3079]: pam_unix(sshd:auth): authentication failure; logname= uid=0 euid=0
 tty=ssh ruser= rhost=192.168.1.99
May 13 12:42:42 ubuntuweb sshd[3079]: Failed password for invalid user kalitest from 192.168.1.99 port 4
3942 ssh2
May 13 12:42:49 ubuntuweb sshd[3079]: pam_unix(sshd:auth): check pass; user unknown
May 13 12:42:51 ubuntuweb sshd[3079]: Failed password for invalid user kalitest from 192.168.1.99 port 4
3942 ssh2
May 13 12:42:53 ubuntuweb sshd[3079]: error: maximum authentication attempts exceeded for invalid user k
alitest from 192.168.1.99 port 43942 ssh2 [preauth]
May 13 12:42:53 ubuntuweb sshd[3079]: Disconnecting invalid user kalitest 192.168.1.99 port 43942: Too m
any authentication failures [preauth]
May 13 12:42:53 ubuntuweb sshd[3079]: PAM 1 more authentication failure; logname= uid=0 euid=0 tty=ssh r
user= rhost=192.168.1.99
May 13 12:43:20 ubuntuweb sudo:    user1 : TTY=pts/0 ; PWD=/home/user1 ; USER=root ; COMMAND=/usr/bin/fa
il2ban-client status sshd
May 13 12:43:20 ubuntuweb sudo: pam_unix(sudo:session): session opened for user root(uid=0) by (uid=1000
)
May 13 12:43:20 ubuntuweb sudo: pam_unix(sudo:session): session closed for user root
May 13 12:45:59 ubuntuweb sudo:    user1 : TTY=pts/0 ; PWD=/home/user1 ; USER=root ; COMMAND=/usr/bin/ca
t /var/log/auth.log
user1@ubuntuweb:~$
```

```
sudo tail -f /var/log/fail2ban.log
```



```
user1@ubuntuweb: ~
user1@ubuntuweb: ~   user1@ubuntuweb: ~   user1@ubuntuweb: ~
user1@ubuntuweb:~$ sudo tail -f /var/log/fail2ban.log
[sudo] password for user1:
2025-05-13 12:52:47,045 fail2ban.filter         [3061]: INFO    [sshd] Found 192.168.1.99 - 2025-05-13 1
2:52:47
2025-05-13 12:52:47,050 fail2ban.filter         [3061]: INFO    [sshd] Found 192.168.1.99 - 2025-05-13 1
2:52:47
2025-05-13 12:52:47,050 fail2ban.filter         [3061]: INFO    [sshd] Found 192.168.1.99 - 2025-05-13 1
2:52:47
2025-05-13 12:52:47,052 fail2ban.filter         [3061]: INFO    [sshd] Found 192.168.1.99 - 2025-05-13 1
2:52:47
2025-05-13 12:52:47,158 fail2ban.actions        [3061]: NOTICE  [sshd] 192.168.1.99 already banned
2025-05-13 12:52:47,158 fail2ban.actions        [3061]: NOTICE  [sshd] 192.168.1.99 already banned
2025-05-13 12:52:47,158 fail2ban.actions        [3061]: NOTICE  [sshd] 192.168.1.99 already banned
2025-05-13 12:52:47,158 fail2ban.actions        [3061]: NOTICE  [sshd] 192.168.1.99 already banned
2025-05-13 12:52:47,181 fail2ban.filter         [3061]: INFO    [sshd] Found 192.168.1.99 - 2025-05-13 1
2:52:47
2025-05-13 12:55:47,020 fail2ban.actions        [3061]: NOTICE  [sshd] Unban 192.168.1.99
2025-05-13 12:56:50,736 fail2ban.filter         [3061]: INFO    [sshd] Found 192.168.1.99 - 2025-05-13 1
2:56:50
2025-05-13 12:56:51,112 fail2ban.filter         [3061]: INFO    [sshd] Found 192.168.1.99 - 2025-05-13 1
2:56:51
2025-05-13 12:56:51,118 fail2ban.filter         [3061]: INFO    [sshd] Found 192.168.1.99 - 2025-05-13 1
2:56:51
2025-05-13 12:56:51,121 fail2ban.filter         [3061]: INFO    [sshd] Found 192.168.1.99 - 2025-05-13 1
2:56:51
2025-05-13 12:56:51,126 fail2ban.filter         [3061]: INFO    [sshd] Found 192.168.1.99 - 2025-05-13 1
2:56:51
2025-05-13 12:56:51,143 fail2ban.filter         [3061]: INFO    [sshd] Found 192.168.1.99 - 2025-05-13 1
2:56:51
2025-05-13 12:56:51,152 fail2ban.filter         [3061]: INFO    [sshd] Found 192.168.1.99 - 2025-05-13 1
2:56:51
2025-05-13 12:56:51,155 fail2ban.filter         [3061]: INFO    [sshd] Found 192.168.1.99 - 2025-05-13 1
2:56:51
2025-05-13 12:56:51,158 fail2ban.filter         [3061]: INFO    [sshd] Found 192.168.1.99 - 2025-05-13 1
2:56:51
2025-05-13 12:56:51,160 fail2ban.filter         [3061]: INFO    [sshd] Found 192.168.1.99 - 2025-05-13 1
```

Step 4

Simulate WordPress Brute-Force with Login Protection

Attempt login to WordPress to validate plugin or application-layer protection.

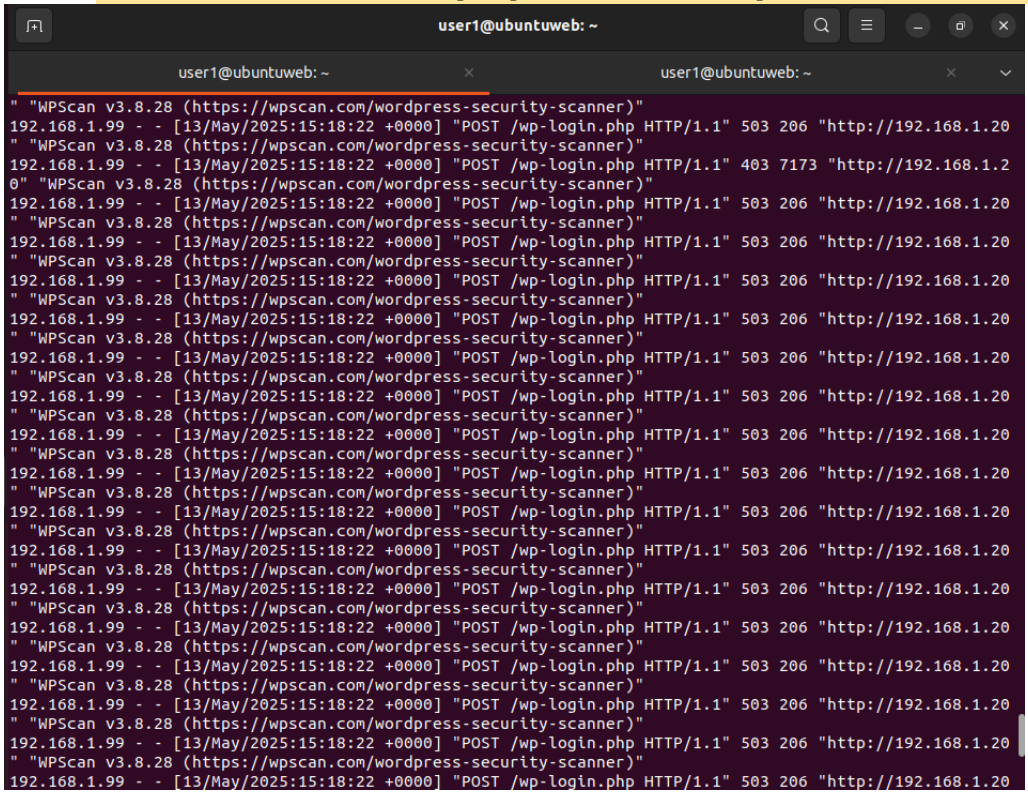
- Use WPScan or Burp Suite for simulated login attempts.
- Monitor login behavior (rate limiting, CAPTCHAs, lockouts).

```
wpscan -v -t2 --url http://<target_IP> -U users.txt -P
passwords.txt -force
```

```
[+] Enumerating Config Backups (via Passive and Aggressive Methods)
 Checking Config Backups - Time: 00:00:00 <=================================================> (137 / 137) 100.00% Time: 00:00:00

[i] No Config Backups Found.

[+] Performing password attack on Wp Login against 22 user/s
Error: Server error, try reducing the number of threads.
Error: Unknown response received Code: 403
Body: <!DOCTYPE html>
<html>
<head>
        <title>403 Forbidden</title>
        <style>
                html {
                        font-family: "Helvetica Neue", Helvetica, Arial, sans-serif;
                        font-size: 0.875rem;
                        line-height: 1.42857143;
                        color: #333;
                        background-color: #fff;
                        padding: 0;
                        margin: 0;
                }

                body {
                        padding: 0;
                        margin: 0;
                }

                a {
                        color:#00709e;
                }

                h1, h2, h3, h4, h5, h6 {
                        font-weight: 200;
                        line-height: 1.1;
                }
```

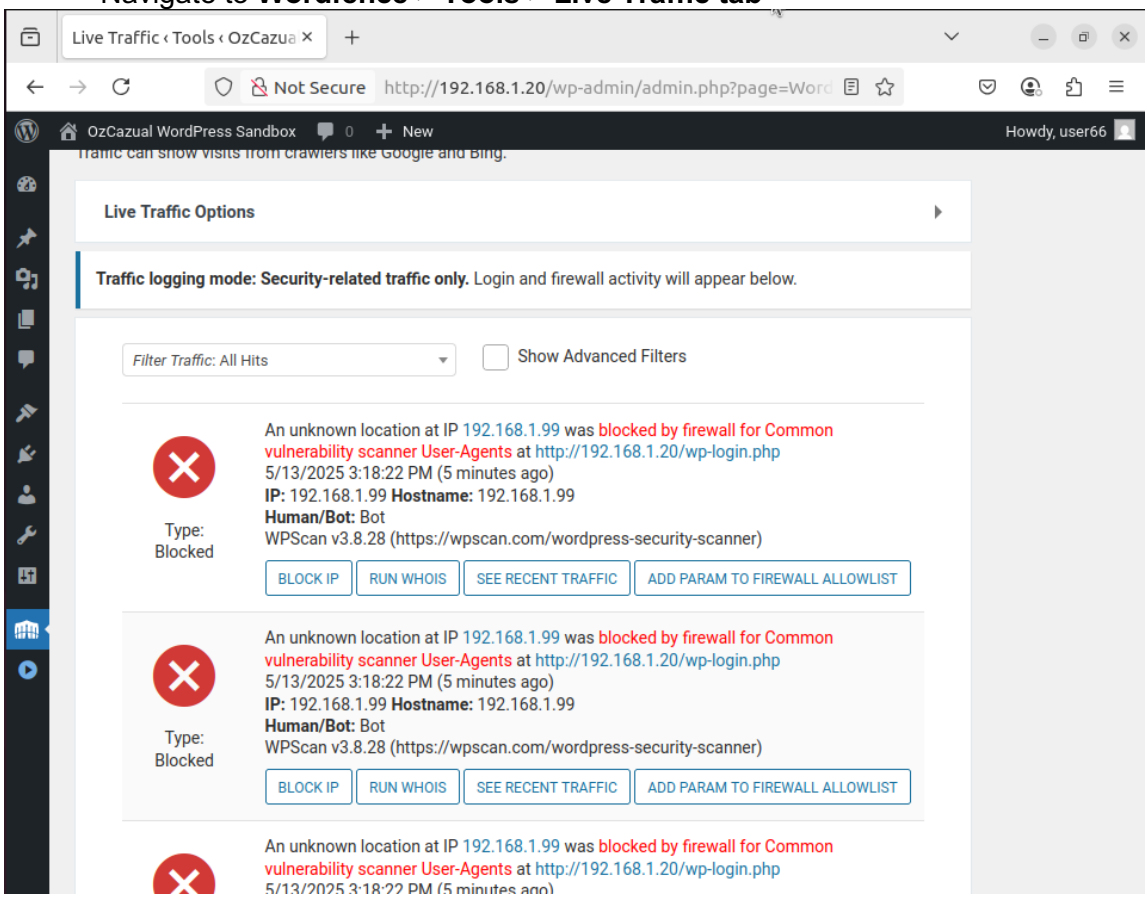
- Check web server access logs and plugin logs.
  - **Web Server access logs:**

```
sudo tail -f /var/log/nginx/access.log
```



```
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 403 7173 "http://192.168.1.2
0" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
" "WPScan v3.8.28 (https://wpscan.com/wordpress-security-scanner)"
192.168.1.99 - - [13/May/2025:15:18:22 +0000] "POST /wp-login.php HTTP/1.1" 503 206 "http://192.168.1.20
```

- **Wordfence Plugin logs:**
  Login to WordPress.
  Navigate to **Wordfence > Tools > Live Traffic tab**



Step 5
Analyze Detection and Logs
Confirm all attacks are logged and responded to as expected.

- Review SSH logs: `/var/log/auth.log`
- Review Fail2Ban logs: `/var/log/fail2ban.log`
- Analyze `/var/log/nginx/access.log` or apache2/access.log
- Review **WordPress plugin logs** if available.

Step 6
Unban and Restore Access
Clear bans to restore access for additional testing.

- Unban test IPs using:
  ```
  sudo fail2ban-client set sshd unbanip <attacker-ip>
  ```
- Re-enable any disabled login protections (e.g., plugin lockouts).
-

Step 7
Document Findings and Final Observations
Record test results and note system behavior.

- Log effectiveness of Fail2Ban and WordPress protections.
- Identify any weaknesses or bypass opportunities.
- Recommend configuration tuning where necessary.
- Export logs/screenshots as part of reporting.
- Refer **Test_observations_results_ubuntu_web_server_v1.pdf**