

# ENIGMA DARK

Securing the Shadows



Security Review & Penetration Testing  
**Unhosted Wallet: Extension Core,  
Backend Services**

February, 2025

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## Summary

### **Enigma Dark**

Enigma Dark is a web3 security firm leveraging the best talent in the space to secure all kinds of blockchain protocols and decentralized apps. Our team comprises experts who have honed their skills at some of the best auditing companies in the industry. With a proven track record as highly skilled white-hats, they bring a wealth of experience and a deep understanding of the technology and the ecosystem.

Learn more about us at [enigmadark.com](https://enigmadark.com)

### **Unhosted Wallet: Extension Core & Backend Services**

Unhosted Wallet is a next-generation, self-custody wallet built on Biconomy's Nexus account abstraction framework. It offers seamless integration with various providers, including fiat24 and Onramper, to enhance user experience.

## Engagement Overview

Over the course of 3 weeks, beginning 27 January 2025, the Enigma Dark team conducted a security review of the Unhosted Wallet: Extension Core & Backend Services project. The review was performed by two Security Researchers: Jakub heba & N0xi0us.

The following repositories were reviewed at the specified commits:

| Repository                              | Commit                                   |
|-----------------------------------------|------------------------------------------|
| Unhosted-Wallet/Unhosted/src/background | d228fa585d25570c895e8103db27ccdfb74886b7 |
| Unhosted-Wallet/unhosted-wallet-backend | 48d5ebbcc5b368ba7ed9d132523f7026dd8f7f39 |
| Unhosted-Wallet/lib-unhosted-swap.js    | aaa093ab2616eba3e57f566e70d50fbaa44c9d38 |
| Unhosted-Wallet/lib-unhosted-signer.js  | 57846236d4de7e37c24c562a11093f8c992af139 |

## Risk Classification

| Severity      | Description                                                                                          |
|---------------|------------------------------------------------------------------------------------------------------|
| Critical      | Vulnerabilities that lead to a loss of a significant portion of funds of the system.                 |
| High          | Exploitable, causing loss or manipulation of assets or data.                                         |
| Medium        | Risk of future exploits that may or may not impact the system.                                       |
| Low           | Minor code errors that may or may not impact the system.                                             |
| Informational | Non-critical observations or suggestions for improving code quality, readability, or best practices. |

## Vulnerability Summary

| Severity      | Count | Fixed | Acknowledged |
|---------------|-------|-------|--------------|
| Critical      | 0     | 0     | 0            |
| High          | 3     | 3     | 0            |
| Medium        | 3     | 3     | 0            |
| Low           | 2     | 2     | 0            |
| Informational | 2     | 2     | 0            |

## Findings

| Index | Issue Title                                                                                                               | Status |
|-------|---------------------------------------------------------------------------------------------------------------------------|--------|
| H-01  | Hardcoded AWS Secrets in Environment Variables                                                                            | Fixed  |
| H-02  | Direct call to the <code>aa</code> service reveals the <code>bundlerSecret</code> and <code>pmSecret</code> in error path | Fixed  |
| H-03  | Lack of pagination enforcement leads to DoS                                                                               | Fixed  |
| M-01  | Race condition allows to repeatedly claim quests                                                                          | Fixed  |
| M-02  | Lack of authorization allows to claim arbitrary quests                                                                    | Fixed  |
| M-03  | Password, seed phrases or private key might be extracted from the browser memory                                          | Fixed  |
| L-01  | Improper address check in wallet creation                                                                                 | Fixed  |
| L-02  | Missing upper cache limit                                                                                                 | Fixed  |
| I-01  | Backend implements never used services                                                                                    | Fixed  |
| I-02  | Unused <code>WalletController</code> handlers                                                                             | Fixed  |

# Detailed Findings

## High Risk

### H-01 - Hardcoded AWS Secrets in Environment Variables

**Severity:** High Risk

**Technical Details:**

During the assessment of the Kubernetes environment in Amazon EKS, it was discovered that AWS access credentials were exposed in the environment variables of running pods. This practice poses a significant security risk, as any process within the container—or an attacker with access to the pod—can extract and misuse these credentials.

**Impact:**

Privilege escalation and information disclosure.

**Recommendation:**

To mitigate this risk, AWS IAM Roles for Service Accounts (IRSA) should be implemented to securely grant AWS permissions to Kubernetes workloads without hardcoded credentials.

**Developer Response:**

Fixed at commit `bf6df8a` .

### H-02 - Direct call to the `aa` service reveals the `bundlerSecret` and `pmSecret` in error path

**Severity:** High Risk

**Technical Details:**

It was found, that the `aa-paymaster-proxy` and `aa-bundler-proxy` services allows for unauthorized call to the, respectively, `/aa/paymaster/${chainId}/` and `/aa/bundler/${chainId}/` endpoints.

When specifying the proper `chainId` , for example 1 (Ethereum), request goes through the service, but due to the unknown reason, returns an error with secret included. Bundler:

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="utf-8">
<title>Error</title>
</head>
<body>
<pre>Cannot GET /api/v3/1/[REDACTED SECRET]/aa/bundler/1</pre>
</body>
</html>
```

Paymaster:

```
{"statusCode":404,"message":"Cannot GET /api/v2/1/[REDACTED SECRET]","error":"Not Found"}
```

### Impact:

Unauthorized access to the Paymaster and Bundler services using the secrets leaked.

### Recommendation:

We recommend to analyze what is the reason of returning secret keys in case of error and mitigate this.

### Developer Response:

Fixed at commit `3c2cb60` .

## H-03 - Lack of pagination enforcement leads to DoS

**Severity:** High Risk

### Technical Details:

While inspecting [referrals/src/utils/paginator.util.ts](#) the following line of code was discovered :

```
const perPage = Number(options?.perPage || defaultOptions?.perPage) || 10;
```

Since `perPage` is controlled by user input and lacks any enforced limits, an attacker can specify an excessively large value. This forces the server to generate and return an extremely large response, leading to excessive resource consumption and potentially causing a Denial of Service (DoS).

For example browsing to:

<http://stg.unhosted.com/transaction/0xD48c694db2e2db7952aaaB453FF9331949fA7405?perPage=100000> reveals that the server accepts any value provided to the `perPage` parameter.

```

chainId: 42161
▼ 107:
  id: "676b0809f8ce6d2743c7bf43"
  timestamp: "2024-12-24T19:14:17.012Z"
  walletAddress: "0xD48c694db2e2db7952aaa8453FF9331949fA7405"
  ▼ txHash: "0x2b6e32a83b79d8334d35f52df3dca2b126fcf385f8305c431f4d1d854233f3f0"
  userOpHash: null
  chainId: 42161
▼ 108:
  id: "676b0836f8ce6d2743c7bf44"
  timestamp: "2024-12-24T19:15:02.321Z"
  walletAddress: "0xD48c694db2e2db7952aaa8453FF9331949fA7405"
  ▼ txHash: "0x3c8b973ab672d828c6781986daf89ba7064e1c5546bad077944009c89497e735"
  userOpHash: null
  chainId: 43114
▼ 109:
  id: "676b0841f8ce6d2743c7bf45"
  timestamp: "2024-12-24T19:15:13.508Z"
  walletAddress: "0xD48c694db2e2db7952aaa8453FF9331949fA7405"
  ▼ txHash: "0x346baa100be8b715144441a5f1784f391e839e29081210c4157dda251a2bab60"
  userOpHash: null
  chainId: 43114
▼ 110:
  id: "676b086af8ce6d2743c7bf46"
  timestamp: "2024-12-24T19:15:54.422Z"
  walletAddress: "0xD48c694db2e2db7952aaa8453FF9331949fA7405"
  ▼ txHash: "0x2d333269813b101fc6468b35e969096fd7fa7653ca3383dc63399db6910483ae"
  userOpHash: null
  chainId: 43114
▼ 111:
  id: "676b08b3f8ce6d2743c7bf47"
  timestamp: "2024-12-24T19:17:07.393Z"
  walletAddress: "0xD48c694db2e2db7952aaa8453FF9331949fA7405"
  ▼ txHash: "0xf8e423305bde97c0662108d009cf3d54be13188f95534fbceac1eb4abdd993ff"
  userOpHash: null
  chainId: 137
▼ meta:
  total: 112
  lastPage: 1
  currentPage: 1
  perPage: 100000
  prev: null
  next: null

```

### Impact:

High, this vulnerability could be exploited to overload the backend referral services, potentially causing downtime.

### Recommendation:

Implement a limit to the number of results being returned by page.

### Developer Response:

Fixed at commit `401b5f1` .

# Medium Risk

## M-01 - Race condition allows to repeatedly claim quests

**Severity:** Medium Risk

### Technical Details:

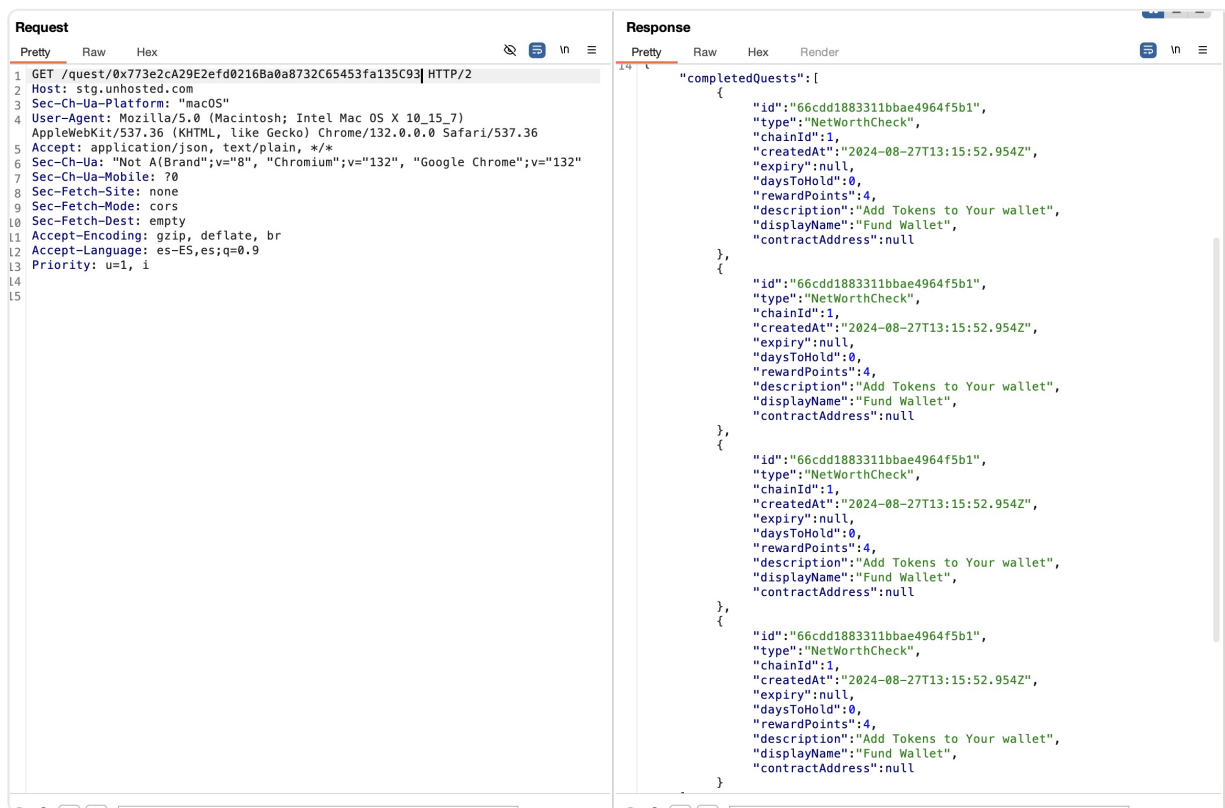
It was discovered that there is a race condition in `/quest/claim` endpoint allowing to claim a quest more than one time.

In order to test this vulnerability, five claim requests were sent in parallel. As a result, the quest was successfully claimed four out of the five attempts.

The screenshot displays the 'Request' and 'Response' tabs of a web browser's developer tools. The 'Request' tab shows a POST request to `/quest/claim` with a JSON body containing a `walletAddress` and a `questId`. The 'Response' tab shows a 201 Created status with a JSON body indicating the quest was successfully claimed.

```
Request
1 POST /quest/claim HTTP/2
2 Host: stg.unhosted.com
3 Content-Length: 101
4 Sec-Ch-Ua-Platform: "macOS"
5 User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/132.0.0.0 Safari/537.36
6 Accept: application/json, text/plain, */*
7 Sec-Ch-Ua: "Not A(Brand";v="8", "Chromium";v="132", "Google Chrome";v="132"
8 Content-Type: application/json
9 Sec-Ch-Ua-Mobile: ?0
10 Origin: chrome-extension://iobolfgjdjpecmkgjdngdgcgdnghoe
11 Sec-Fetch-Site: none
12 Sec-Fetch-Mode: cors
13 Sec-Fetch-Dest: empty
14 Accept-Encoding: gzip, deflate, br
15 Accept-Language: es-ES,es;q=0.9
16 Priority: u=1, i
17 {
18   "walletAddress": "0x773e2cA29E2efD0216Ba0a8732C65453fa135C93",
19   "questId": "66cdd1883311bbae4964f5b1"
20 }
```

```
Response
1 HTTP/2 201 Created
2 Date: Tue, 11 Feb 2025 09:48:25 GMT
3 Content-Type: application/json; charset=utf-8
4 Content-Length: 248
5 Etag: W/"f8-WGM8U1Lo3XcBc2auFUnbsYuru+o"
6 X-Powered-By: Express
7 Cf-Cache-Status: DYNAMIC
8 Report-To:
9   {"endpoints": [{"url": "https://a.nel.cloudflare.com/report/v4?s=NdDEGcBR5n3Y8zF1z1z2b2HDTWDSbfDhzMK4x%2Faf9c8EU10r3jXF85KTrctJ9uPrav7IA3vMSHERKaJoyFmHEL1bXhUmTL%2BqQgJB0q9eKE2wDNaiChJI9iBEEUgJGe4yXBcA"}], "group": "cf-nel", "max_age": 604800}
10 Nel: {"success_fraction": 0, "report_to": "cf-nel", "max_age": 604800}
11 Server: cloudflare
12 Cf-Ray: 91036c5138c02f8e-MAD
13 Alt-Svc: h3="443"; ma=86400
14 Server-Timing:
15   cfL4;desc="?proto=TCP&rtt=10155&min_rtt=89396&rtt_var=1846&sent=12&recv=13&lost=0&retrans=0&sent_bytes=1012&recv_bytes=2897&delivery_rate=422008&cwnd=255&nsent_bytes=0&cid=8e49f06d149a8be3&ts=381&lx=0"
16 {
17   "message": "Quest successfully claimed.",
18   "newWalletQuest": {
19     "id": "67ab1ce906b668a3eab026a4",
20     "completedAt": true,
21     "completedAt": "2025-02-11T09:48:25.408Z",
22     "questId": "66cdd1883311bbae4964f5b1",
23     "walletAddress": "0x773e2cA29E2efD0216Ba0a8732C65453fa135C93"
24   }
25 }
```



### Impact:

Medium, Increase points by claiming quests several times.

### Developer Response:

Fixed. The quests have been removed for the current version.

## M-02 - Lack of authorization allows to claim arbitrary quests

**Severity:** Medium Risk

### Technical Details:

It was discovered that there are not any checks in place to verify a user has successfully completed a quest before awarding points. Since endpoint `/wallet/walletAddress` returns the IDs of uncompleted quests, a malicious user can just send a POST request to `/quest/claim` passing their walletAddress and questId to successfully claim any quest.

This allows for the enumeration of quest IDs:

Request

PrettyRawHex

1 GET /quest/0xF8DE2a1ebf045ce69F9C86B5c6F86A270f733576 HTTP/2  
2 Host: stg.unhosted.com  
3 Sec-Ch-Ua-Platform: "macOS"  
4 User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10\_15\_7)  
5 AppleWebKit/537.36 (KHTML, like Gecko) Chrome/132.0.0.0 Safari/537.36  
6 Accept: application/json, text/plain, \*/\*  
7 Sec-Ch-Ua: "Not A(Brand";v="8", "Chromium";v="132", "Google Chrome";v="132"  
8 Sec-Ch-Ua-Mobile: ?0  
9 Sec-Fetch-Site: none  
10 Sec-Fetch-Mode: cors  
11 Sec-Fetch-Dest: empty  
12 Accept-Encoding: gzip, deflate, br  
13 Accept-Language: es-ES,es;q=0.9  
14 Priority: u=1, i  
15

Response

PrettyRawHexRender

3 Content-Type: application/json; charset=utf-8  
4 Etag: W/"25e-eFmAZhLSVZPUxHAqNeE5jh98T5w"  
5 X-Powered-By: Express  
6 Cf-Cache-Status: DYNAMIC  
7 Report-To:  
8 {"endpoints":[{"url":"https://a.nel.cloudflare.com/report/v4?s=31880aVxUiRuyJHd74%2F1LK1G51HWAcBGK3kqPGizX%2BuJRyPlw%2FHcpmNzullz01TQTY1m4M63rRLEplfta7357IM2lMTy99cqCIwg8DZXy2ZvR13PV4TGNvZcp%2B2EySqe7f06"}],"group":"cf-nel","max\_age":604800}  
9 Nel: {"success\_fraction":0,"report\_to":"cf-nel","max\_age":604800}  
10 Server: cloudflare  
11 Cf-Ray: 910359ef392deca9-MAD  
12 Alt-Svc: h3=":443"; ma=86400  
13 Server-Timing:  
14 cfl4;desc="?proto=TCP&rtt=12839&min\_rtt=11922&rtt\_var=3956&sent=7&recv=11&lost=0&retrans=0&sent\_bytes=3679&recv\_bytes=1247&delivery\_rate=362355&cwnd=225&nresent\_bytes=0&cid=4f9de3bad8e93ce5&ts=596&x=0"  
15 {  
16 "completedQuests": [  
17 ],  
18 "incompleteQuests": [  
19 {  
20 "id": "66cdd1883311bbae4964f5b1",  
21 "type": "NetWorthCheck",  
22 "chainId": 1,  
23 "createdAt": "2024-08-27T13:15:52.954Z",  
24 "expiry": null,  
25 "daysToHold": 0,  
26 "rewardPoints": 4,  
27 "description": "Add Tokens to Your wallet",  
28 "displayName": "Fund Wallet",  
29 "contractAddress": null  
30 },  
31 {  
32 "id": "66cdd1893311bbae4964f5b2",  
33 "type": "ContractInteractionCheck",  
34 "chainId": 137,  
35 "createdAt": "2024-08-27T13:15:53.666Z",  
36 "expiry": null,  
37 "daysToHold": null,  
38 "rewardPoints": 6,  
39 "description":  
40 "Send any token from your wallet using pay any (pay gas fees u  
41 sing stablecoins)",  
42 "displayName": "Send Tokens",  
43 "contractAddress": null  
44 }  
45 ]  
46 }  
47

0 highlights

0 highlights

Additionally, quests can be claimed without completing the required tasks:

Request

PrettyRawHex

1 POST /quest/claim HTTP/2  
2 Host: stg.unhosted.com  
3 Content-Length: 101  
4 Sec-Ch-Ua-Platform: "macOS"  
5 User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10\_15\_7)  
6 AppleWebKit/537.36 (KHTML, like Gecko) Chrome/132.0.0.0 Safari/537.36  
7 Accept: application/json, text/plain, \*/\*  
8 Sec-Ch-Ua: "Not A(Brand";v="8", "Chromium";v="132", "Google Chrome";v="132"  
9 Content-Type: application/json  
10 Sec-Ch-Ua-Mobile: ?0  
11 Origin: chrome-extension://iobolfgjdjpecmkgjdngndgocgdgnhoe  
12 Sec-Fetch-Site: none  
13 Sec-Fetch-Mode: cors  
14 Sec-Fetch-Dest: empty  
15 Accept-Encoding: gzip, deflate, br  
16 Accept-Language: es-ES,es;q=0.9  
17 Priority: u=1, i  
18 {  
19 "walletAddress": "0xF8DE2a1ebf045ce69F9C86B5c6F86A270f733576",  
20 "questId": "66cdd1883311bbae4964f5b1"  
21 }  
22

Response

PrettyRawHexRender

1 HTTP/2 201 Created  
2 Date: Tue, 11 Feb 2025 09:36:30 GMT  
3 Content-Type: application/json; charset=utf-8  
4 Content-Length: 248  
5 Etag: W/"f8-65a1X4S0gh1WSW02Ed15ps01tYE"  
6 X-Powered-By: Express  
7 Cf-Cache-Status: DYNAMIC  
8 Report-To:  
9 {"endpoints":[{"url":"https://a.nel.cloudflare.com/report/v4?s=%2FmWjXImyF6W1ib0MNCNGOLBV8vAtDk8LrITnDrqzBLXtH52A4MnGe0Ehk2UMz%2FpmdrfrnddYV0UaVrV%2FVQ1tVu0c6UDFzMUcxeYP954z4k6GLA0%2Fz%2F00KD52iKxaE%2B4H82Coc8hS0%3D%3D"}],"group":"cf-nel","max\_age":604800}  
10 Nel: {"success\_fraction":0,"report\_to":"cf-nel","max\_age":604800}  
11 Server: cloudflare  
12 Cf-Ray: 91035adb9e3b5e1d-MAD  
13 Alt-Svc: h3=":443"; ma=86400  
14 Server-Timing:  
15 cfl4;desc="?proto=TCP&rtt=33411&min\_rtt=11817&rtt\_var=20398&sent=6&recv=13&lost=0&retrans=0&sent\_bytes=781&recv\_bytes=1754&delivery\_rate=121858&cwnd=32&nresent\_bytes=0&cid=3a76de1c6cbebc1c&ts=282&x=0"  
16 {  
17 "message": "Quest successfully claimed.",  
18 "newWalletQuest": {  
19 "id": "67ab1ae86b668a3eab026a1",  
20 "completed": true,  
21 "completedAt": "2025-02-11T09:36:30.171Z",  
22 "questId": "66cdd1883311bbae4964f5b1",  
23 "walletAddress": "0xF8DE2a1ebf045ce69F9C86B5c6F86A270f733576"  
24 }  
25 }  
26

| Request                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |     |     |  | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |     |     |        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|--------|
| Pretty                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Raw | Hex |  | Pretty                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Raw | Hex | Render |
| <pre> 1 POST /quest/claim HTTP/2 2 Host: stg.unhosted.com 3 Content-Length: 101 4 Sec-Ch-Ua-Platform: "macOS" 5 User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7)   AppleWebKit/537.36 (KHTML, like Gecko) Chrome/132.0.0.0 Safari/537.36 6 Accept: application/json, text/plain, */* 7 Sec-Ch-Ua: "Not A(Brand";v="8", "Chromium";v="132", "Google Chrome";v="132" 8 Content-Type: application/json 9 Sec-Ch-Ua-Mobile: ?0 10 Origin: chrome-extension://iobolfgjdjpecmkjgndngdcgdcgdnhoe 11 Sec-Fetch-Site: none 12 Sec-Fetch-Mode: cors 13 Sec-Fetch-Dest: empty 14 Accept-Encoding: gzip, deflate, br 15 Accept-Language: es-ES,es;q=0.9 16 Priority: u=1, i 17 { 18   "walletAddress": "0xF8DE2a1ebf045ce69F9C86B5c6F86A270f733576", 19   "questId": "66cdd1893311bbae4964f5b2" 20 } </pre> |     |     |  | <pre> 1 HTTP/2 201 Created 2 Date: Tue, 11 Feb 2025 09:39:07 GMT 3 Content-Type: application/json; charset=utf-8 4 Content-Length: 248 5 Etag: W/"f8-f4pWMOFFj6GZx0tXR89Q6ZZZQ" 6 X-Powered-By: Express 7 Cf-Cache-Status: DYNAMIC 8 Report-To:   {"endpoints":[{"url":"https://a.nel.cloudflare.com/report/v4?s=6X8Cj2ju%2   FHxynWw%2BVD5Fe4LuaZYucCaa5gLoPIXJ25ZFN4539TbxdKJ5IdnsHYxz%2FwcFqR0k1nMcHnSss   LFLrrHsCqvxVRGowDlRClfc8zUZUyTJRuqEjIktDl5dmgpZuCC"}],"group":"cf-nel","max_   age":604800} 9 Nel: {"success_fraction":0,"report_to":"cf-nel","max_age":604800} 10 Server: cloudflare 11 Cf-Ray: 91035eb1f8eeb044-MAD 12 Alt-Svc: h3=":443"; ma=86400 13 Server-Timing:   cfl4;desc="?proto=TCP&amp;rtt=12474&amp;min_rtt=107036&amp;rtt_var=4555&amp;sent=5&amp;recv=136&amp;lo   st=0&amp;retrans=0&amp;sent_bytes=781&amp;recv_bytes=1747&amp;delivery_rate=134541&amp;wnd=244&amp;un   sent_bytes=0&amp;cid=3e7a07096fe5be7c&amp;ts=238&amp;x=0" 14 { 15   "message": "Quest successfully claimed.",   "newWalletQuest": {     "id": "67ab1abb06b668a3eab026a2",     "completed": true,     "completedAt": "2025-02-11T09:39:07.327Z",     "questId": "66cdd1893311bbae4964f5b2",     "walletAddress": "0xF8DE2a1ebf045ce69F9C86B5c6F86A270f733576"   } 16 } </pre> |     |     |        |

| Request                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |     |     |  | Response                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |     |     |        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|--|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|-----|--------|
| Pretty                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Raw | Hex |  | Pretty                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | Raw | Hex | Render |
| <pre> 1 GET /quest/0xF8DE2a1ebf045ce69F9C86B5c6F86A270f733576 HTTP/2 2 Host: stg.unhosted.com 3 Sec-Ch-Ua-Platform: "macOS" 4 User-Agent: Mozilla/5.0 (Macintosh; Intel Mac OS X 10_15_7)   AppleWebKit/537.36 (KHTML, like Gecko) Chrome/132.0.0.0 Safari/537.36 5 Accept: application/json, text/plain, */* 6 Sec-Ch-Ua: "Not A(Brand";v="8", "Chromium";v="132", "Google Chrome";v="132" 7 Sec-Ch-Ua-Mobile: ?0 8 Sec-Fetch-Site: none 9 Sec-Fetch-Mode: cors 10 Sec-Fetch-Dest: empty 11 Accept-Encoding: gzip, deflate, br 12 Accept-Language: es-ES,es;q=0.9 13 Priority: u=1, i 14 15 </pre> |     |     |  | <pre> 3 Content-Type: application/json; charset=utf-8 4 Etag: W/"25e-f6yRD3eA89jND0LT4K04YRG9/yI" 5 X-Powered-By: Express 6 Cf-Cache-Status: DYNAMIC 7 Report-To:   {"endpoints":[{"url":"https://a.nel.cloudflare.com/report/v4?s=u%2Be0TjHn   94G%2Ba%2BU381lGnyqvqAA%2FQJ8Wp2%2BC%2FsF9MEj8%2FnbFzVdcqAM8YML9vLY09jU9iPa8   4D5ikCtS2ryMf9syB9yyLrFKAGIM0FCn9zA73EMXmkMaCzlidGn5lu4NjG"}],"group":"cf-ne   l","max_age":604800} 8 Nel: {"success_fraction":0,"report_to":"cf-nel","max_age":604800} 9 Server: cloudflare 10 Cf-Ray: 9103603c18aeafda-MAD 11 Alt-Svc: h3=":443"; ma=86400 12 Server-Timing:   cfl4;desc="?proto=TCP&amp;rtt=37839&amp;min_rtt=10547&amp;rtt_var=23574&amp;sent=5&amp;recv=11&amp;lo   st=0&amp;retrans=0&amp;sent_bytes=781&amp;recv_bytes=1518&amp;delivery_rate=136531&amp;wnd=232&amp;u   nsent_bytes=0&amp;cid=42ac80c4d100bb37&amp;ts=7822&amp;x=0" 13 14 { 15   "completedQuests": [ 16     { 17       "id": "66cdd1883311bbae4964f5b1", 18       "type": "NetWorthCheck", 19       "chainId": 1, 20       "createdAt": "2024-08-27T13:15:52.954Z", 21       "expiry": null, 22       "daysToHold": 0, 23       "rewardPoints": 4, 24       "description": "Add Tokens to Your wallet", 25       "displayName": "Fund Wallet", 26       "contractAddress": null 27     }, 28     { 29       "id": "66cdd1893311bbae4964f5b2", 30       "type": "ContractInteractionCheck", 31       "chainId": 137, 32       "createdAt": "2024-08-27T13:15:53.666Z", 33       "expiry": null, 34       "daysToHold": null, 35       "rewardPoints": 6, 36       "description": 37         "Send any token from your wallet using pay any (pay gas fees u 38         sing stablecoins)", 39       "displayName": "Send Tokens", 40       "contractAddress": null 41     } 42   ], 43   "incompleteQuests": [ 44   ] 45 } </pre> |     |     |        |

## Impact:

Malicious users can claim any quest and receive points without completing the required tasks.

## Recommendation:

Implement authorization checks to verify a quest has been completed before allowing to claim it.

## Developer Response:

Fixed. The quests have been removed in the current version.

## M-03 - Password, seed phrases or private key might be extracted from the browser memory

**Severity:** Medium Risk

### Technical Details:

Sensitive data, including the mnemonic, private key, and user password, remain in the extension's process memory after being used or displayed. These values persist until the extension is fully closed, posing a significant security risk.

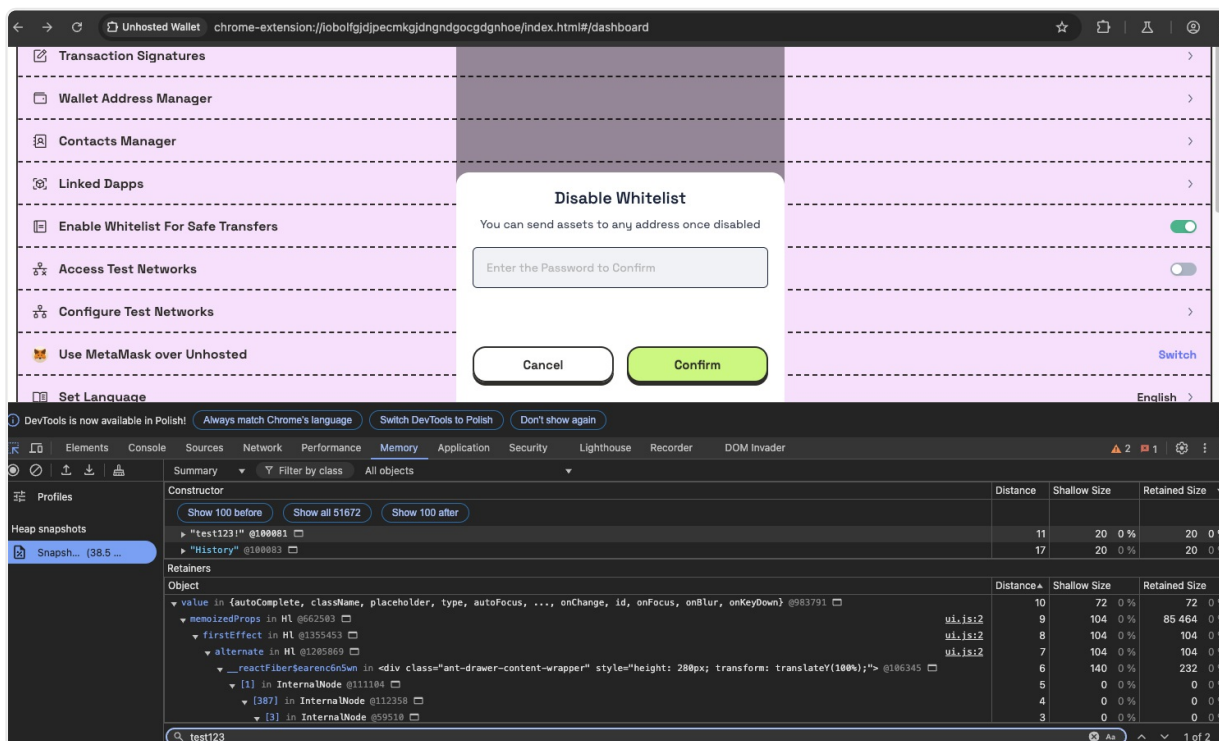
This is particularly problematic because:

- If an attacker gains physical access to the device or if the device is infected with malware, the browser's memory could be dumped.
- This would allow an attacker to extract these confidential values without requiring the user's password, bypassing standard authentication flows.

Additionally, these sensitive strings remain in memory even after `setLocked` is called, meaning that even when the extension is locked, requiring a password to unlock, the data remains accessible in the subprocess memory.

### Proof of Concept:

Password being extracted from the extension memory:



### Impact:

Extraction of mnemonic, private key or user password from the memory of the extension process, leading to the funds being stolen.

**Recommendation:**

Make sure that after every critical operation, like password usage, private key displaying or other, the memory part storing these strings are properly overwritten.

**Developer Response:**

Fixed at commit `61a1c96` .

We've implemented an improved input component to securely handle passwords and private keys, preventing leaks by intercepting input via `onKeyDown` and encoding values into `Uint8Array`. Additionally, values received from the wallet controller are encoded, and they are only decoded when being sent back.

For display and copying, we've adjusted how seed phrases and private keys are passed to the respective components—exposing them to the DOM only when necessary and ensuring they are removed from memory during unmount.

# Low Risk

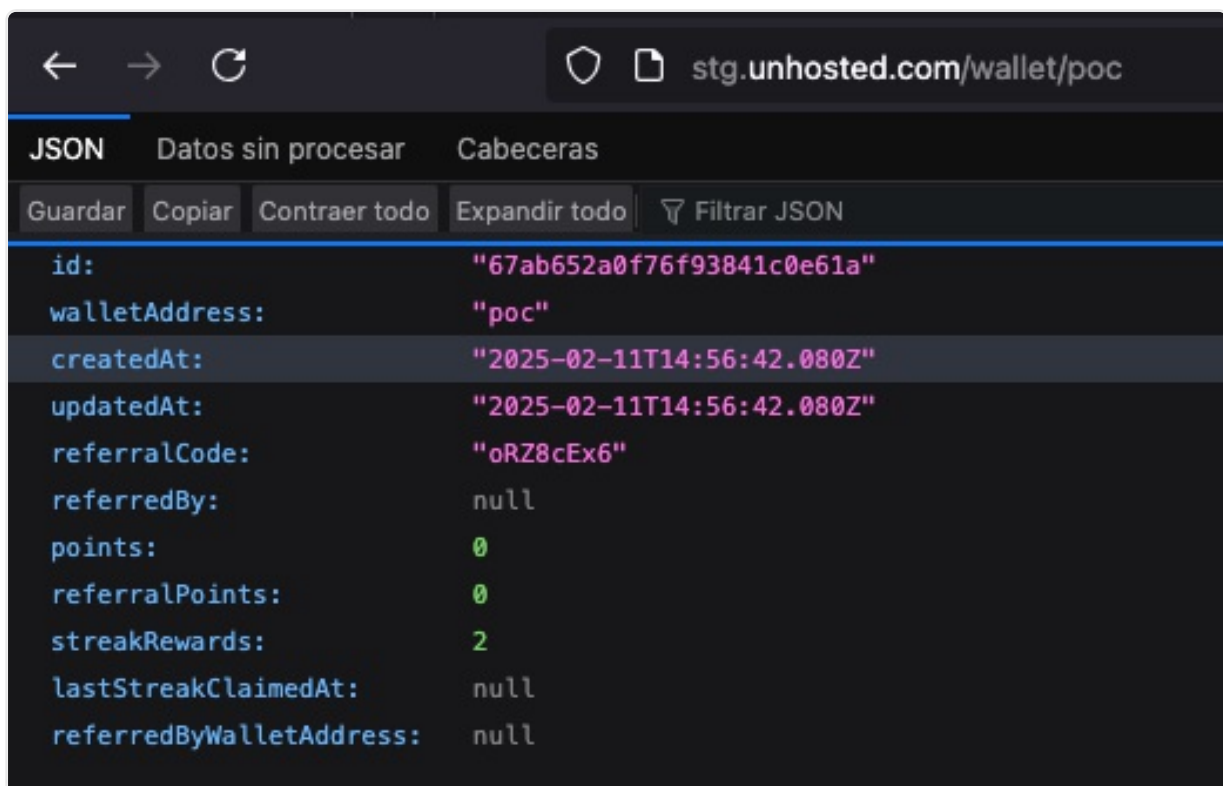
## L-01 - Improper address check in wallet creation

**Severity:** Low Risk

**Technical Details:**

The address check being performed in `referrals/src/wallet/wallet.controller.ts` is incorrect, allowing a user to create and insert new wallets in the DB with arbitrary data.

As an example, browse to: <http://stg.unhosted.com/wallet/poc>



**Impact:**

Filling the DB with invalid addresses.

**Recommendation:**

Review how the check is implemented.

**Developer Response:**

Fixed at commit `589d031`.

The validation was being bypassed due to how decorators interact with object destructuring in JavaScript. We resolved this by passing the entire object instead of destructuring it, ensuring that validation executes correctly.

## L-02 - Missing upper cache limit

**Severity:** Low Risk

**Technical Details:**

It was found that proper expiration times were set for cache storing. While this prevents usage of outdated data or storing unnecessary information, there is no upper limit defined for how much of such information might be stored in the user browser.

Given that multiple `eth-*` methods are supported by `canCache`, a malicious site could utilize it to fill the user's memory with dummy data, leading to decreased user experience and potential browser crash.

**Impact:**

Decreased user experience and potential browser crash.

**Recommendation:**

We recommend defining a maximum cap for cache that should be allowed by the extension.

**Developer Response:**

Fixed in [PR 219](#).

# Informational

## I-01 - Backend implements never used services

**Severity:** Informational

**Technical Details:**

It was found that the Moralis service in `apps/metadata/src/moralis/moralis-metadata.service.ts` defines the `getTransactionVerbose` and `getWalletNetWorth` functions, which are not called by any of the current functionalities.

While not a security issue itself, such functions might be related to not-implemented, forgotten functionalities, which need to be created to fulfill functional requirements.

**Impact:**

Potential missing functionality or service implementation.

**Recommendation:**

We recommend removing the unused functions or defining proper handlers to utilize them.

**Developer Response:**

Fixed at commit [e4e7a4b](#).

## I-02 - Unused WalletController handlers

**Severity:** Informational

**Technical Details:**

In the `WalletController` handlers list, defined in `src/background/controller/wallet.ts`, multiple of them are not used anywhere in the logic, or called internally. While not directly a security issue, such leftovers might be problematic if some of these functionalities were planned to be implemented, but during the development phase they were forgotten.

Samples: `clearRabbyPointsSignature`, `getLastGetAddress`, `clearWatchMode`, `checkHasMnemonic`, `deriveNewAccountFromMnemonic`, `getAccountsCount`, `checkLedgerHasHIDPermission`, `completedTransaction`, `updateInitAlianNameStatus`, `getCustomTestnetTxReceipt`.

**Impact:**

Potentially not implemented functionalities, leading to broken logic or missing business assumptions coverage.

**Recommendation:**

We recommend removing these handlers if they are not needed in the current logic, or implementing proper functionalities to utilize them in the current codebase.

**Developer Response:**

Fixed in [PR 220](#)

## Disclaimer

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