



འབྲུག་རྒྱལ་འཛིན་གཞུག་ལག་སློབ་མེ།

College of Science and Technology
Rinchending: Bhutan

Continuous Practical Assignment4

SWS101

Introduction to Cybersecurity

(SS2024)

CAP{No.4} Report

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RUB Wheel of Academic Law: Academic Dishonesty

Section H2 of the Royal University of Bhutan's *Wheel of Academic Law* provides the following definition of academic dishonesty:

Academic dishonesty may be defined as any attempt by a student to gain an unfair advantage in any assessment. It may be demonstrated by one of the following:

1. **Collusion:** the representation of a piece of unauthorized group work as the work of a single candidate.
2. **Commissioning:** submitting an assignment done by another person as the student's own work.
3. **Duplication:** the inclusion in coursework of material identical or substantially similar to material which has already been submitted for any other assessment within the University.
4. **False declaration:** making a false declaration in order to receive special consideration by an Examination Board or to obtain extensions to deadlines or exemption from work.
5. **Falsification of data:** presentation of data in laboratory reports, projects, etc., based on work purported to have been carried out by the student, which has been invented, altered or copied by the student.
6. **Plagiarism:** the unacknowledged use of another's work as if it were one's own.

Examples are:

- verbatim copying of another's work without acknowledgement.
- paraphrasing of another's work by simply changing a few words or altering the order of presentation, without acknowledgement.
- ideas or intellectual data in any form presented as one's own without acknowledging the source(s).
- making significant use of unattributed digital images such as graphs, tables, photographs, etc. taken from test books, articles, films, plays, handouts, internet, or any other source, whether published or unpublished.
- submission of a piece of work which has previously been assessed for a different award or module or at a different institution as if it were new work.
- use of any material without prior permission of copyright from appropriate authority or owner of the materials used".



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Executive summary

As our assignment, Mr. Kamal Acharya sent us link of a lab that need to be complete for to mark for our practical assessment four. We are to complete the labs and write reports on the bugs that have been found. The evidences for exploiting the labs are uploaded in the github and the link to the github repository is provided below:

<https://github.com/SonamTenzin1/SWS101CAP4.git>

Approach

I performed testing under a “black box” method on all the labs since any information for the lab has not been given. The testing was performed remotely via a host that was provisioned specifically for this assessment. The vulnerabilities that were found are documented in detail and they were manually investigated by myself.



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Scope

The scope of this this testing was to find the bugs in the labs.

In-Scope assets

URL	Description
https://app.hackthebox.com/machines/608	URL for the lab

Table 1: scope details

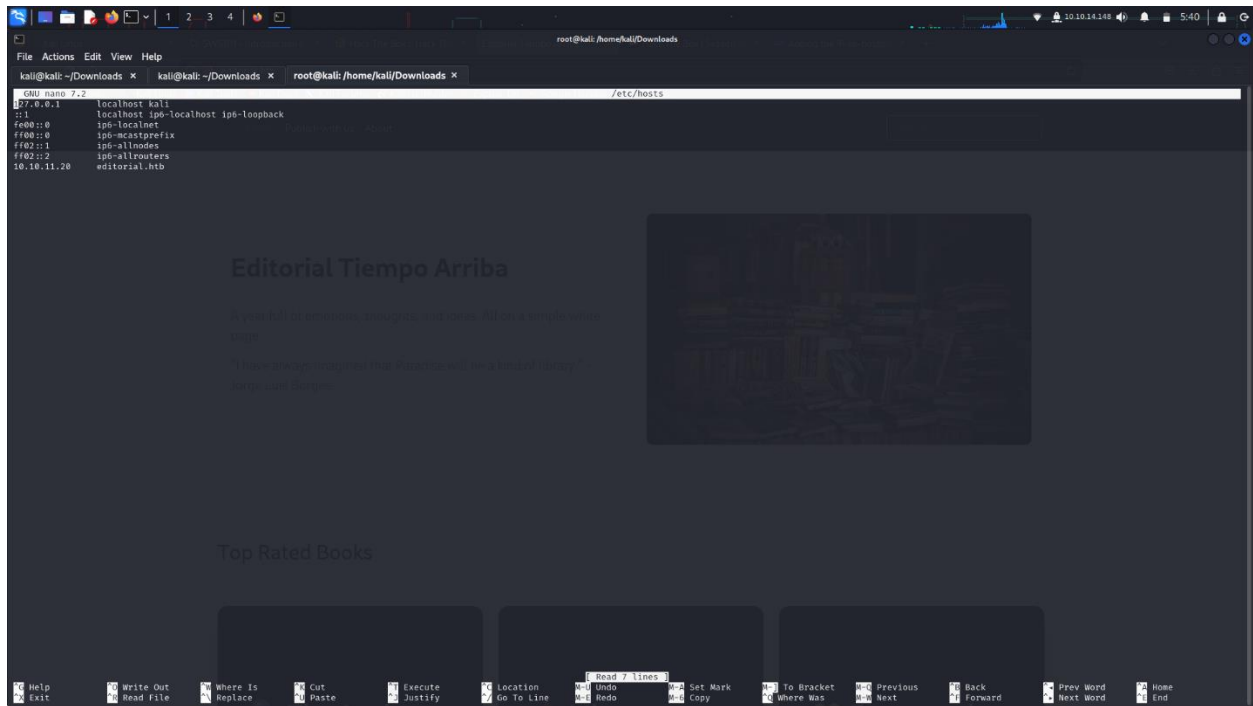
Assessment Overview and Recommendations



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Website Penetration Test Assessment Summary



I began by adding the IP address and the domain name in /etc/hosts file because when I the IP address seemed to have a website but couldn't ber viewed if I didn't do this.



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Kali Linux

SWS101 - Introduction to

Hack The Box - Hack The

Publish Your Book With Us

Hack The Box | Season 5

Adding the IP-to-hostna

http-enum NSE script

10:10:16:348

5:43

editorial.htbupload

Import bookmarks...

Kali Linux

Kali Tools

Kali Docs

Kali Forums

Kali NetHunter

Exploit-DB

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Our editorial will be happy to publish your book. Please provide next information to meet you.

Book information



Cover URL related to your book or

Browse...

No file selected.

Preview

Book name

Tell us about your book

Why did you choose this publisher?

Contact Email

Contact Phone

A clone evacuation attack is interested in the upload page as an attacker. Why? It puts a lot of opportunities for attack vectors, easy peasy, lemon squeezy!



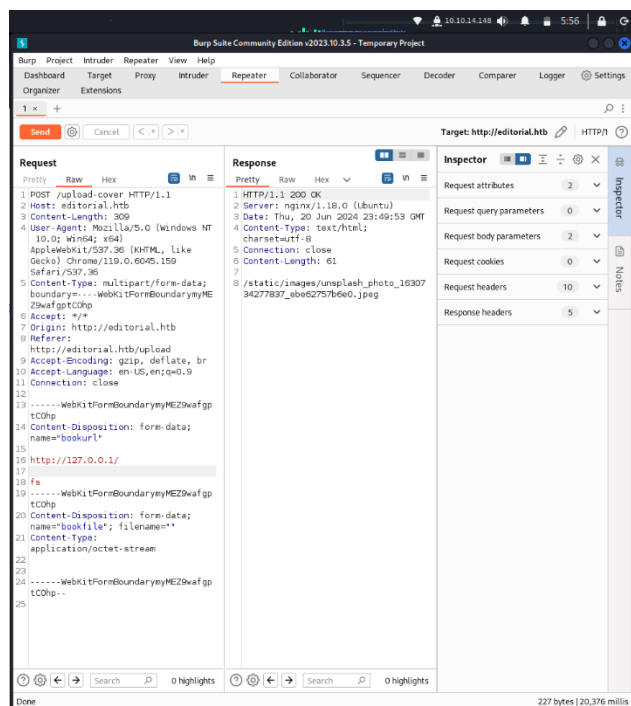
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This one is a clear indicator of SSRF loaded in AS reflecting an external site. Thus, we found out how to get our first to enter the system at least to indicate the direction towards this goal. Now let's try to make the input field local IP, which is 127. 0. 0. 1 and I'm curious how will it turn out. Just when entering data through each of the input fields, I observed that a few seconds after entering "Book information" field a request is being sent to the server as shown below:





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Quite similar, I received a jpeg endpoint into the response. When download by using the response endpoint after appending 'editorial'. htb, it downloaded something like a file with zero containing information as well as any information about the data in the file. Perhaps, we need to get to one particular port. . Well, now we are only air it, we shall wait and see how it turns out. As we will be using the Intruder now to port scan and blind injection, let's start by using it to brute force the port.

Set the payload type as Numbers with from 1 TO 65535 and Step 1. And ATTACK Once done use filters to filter out the results which has the usual jpeg endpoint in the response and got the 5000 port as the different with a different endpoint in the response.

Request	Payload	Status code	Error	Timeout	Length	Comment
0		200			232	
1	5000	200			232	
2		200			232	
3	42324	200			232	
4	323245324	200			232	
5	32432	200			232	
6	432	200			232	
7	4	200			232	
8	32	200			232	
9	432	200			232	
10	432	200			232	
11	4	200			232	
12	45	200			232	
13	35	200			232	
14		200			232	
15	54	200			232	
16	5	200			232	
17	4356	200			232	
18	4	200			232	
19	5	200			232	
20	46	200			232	
21	5	200			232	
22	6	200			232	

Request	Response
1	HTTP/1.1 200 OK 2 Server: nginx/1.18.0 (Ubuntu) 3 Date: Fri, 21 Jun 2024 00:17:45 GMT 4 Content-Type: text/html; charset=utf-8 5 Connection: keep-alive 6 Content-Length: 51 7 8 static/uploads/2b458b1b-2bcc-4daa-b643-c668409b-4cd5

When the endpoint was tried in the browser it downloaded a file:



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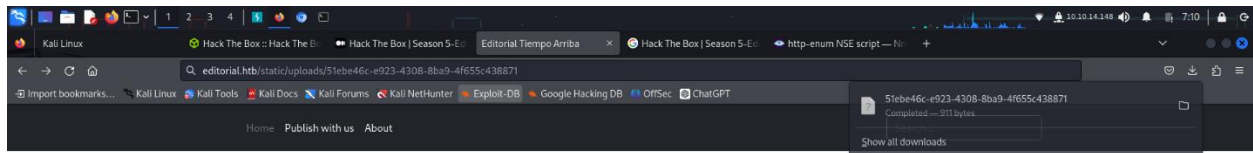


```
1
2 {
3   "messages": [
4     {
5       "promotions": {
6         "description": "Retrieve a list of all the promotions in our library.",
7         "endpoint": "/api/latest/metadata/messages/promos",
8         "methods": "GET"
9       }
10    },
11    {
12      "coupons": {
13        "description": "Retrieve the list of coupons to use in our library.",
14        "endpoint": "/api/latest/metadata/messages/coupons",
15        "methods": "GET"
16      }
17    },
18    {
19      "new_authors": {
20        "description": "Retrieve the welcome message sent to our new authors.",
21        "endpoint": "/api/latest/metadata/messages/authors",
22        "methods": "GET"
23      }
24    },
25    {
26      "platform_use": {
27        "description": "Retrieve examples of how to use the platform.",
28        "endpoint": "/api/latest/metadata/messages/how_to_use_platform",
29        "methods": "GET"
30      }
31    }
32  ],
33  "version": [
34    {
35      "changelog": {
36        "description": "Retrieve a list of all the versions and updates of the api.",
37        "endpoint": "/api/latest/metadata/changelog",
38        "methods": "GET"
39      }
40    },
41    {
42      "latest": {
43        "description": "Retrieve the last version of api.",
44        "endpoint": "/api/latest/metadata",
45        "methods": "GET"
46      }
47    }
48  ]
49 }
```



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Editorial Tiempo Arriba

A year full of emotions, thoughts, and ideas. All on a simple white page.

"I have always imagined that Paradise will be a kind of library." - Jorge Luis Borges.



Top Rated Books

<https://www.exploit-db.com>

Well, although it looks like it has been discussed we have no other choice that hit all the API endpoints, obviously!

I wanted to examine the concrete file that I received when the endpoint `/api/latest/metadata/messages/authors` was requested. When read, it gave this output:

```
1 {
2   "template_mail_message": "Welcome to the team! We are thrilled to have you on board and can't wait to see the incredible content you'll bring to the table.\n
3   \nYour login credentials for our internal forum and authors site are:\nUsername: dev\nPassword: dev880217_devAPI@#\n
4   \nPlease be sure to change your password as soon as possible for security purposes.\n\n
5   \nDon't hesitate to reach out if you have any questions or ideas - we're always here to support you.\n\nBest regards, Editorial Tiempo Arriba Team."
6 }
```




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Summary of Findings

During the course of testing, I discovered that 17 ports were open in total. However, I could manage to gain root access through 4 ports only. The table below shows the severity of the ports:

Finding severity			
High	Medium	Low	Total
4	0	0	4

Table 2: severity summary



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Conclusion

As I reflect on completing the basic challenges on <https://app.hackthebox.com/machines/608>, I feel a profound sense of accomplishment and growth. These challenges have not only honed my technical skills but have also taught me invaluable lessons about cybersecurity and problem-solving. From the initial stages learning basic concepts to the more intricate puzzles requiring creative thinking, each challenge has pushed me to think outside the box and approach problems from different angles.