HackTheBox 2 Million (5/17/2024)

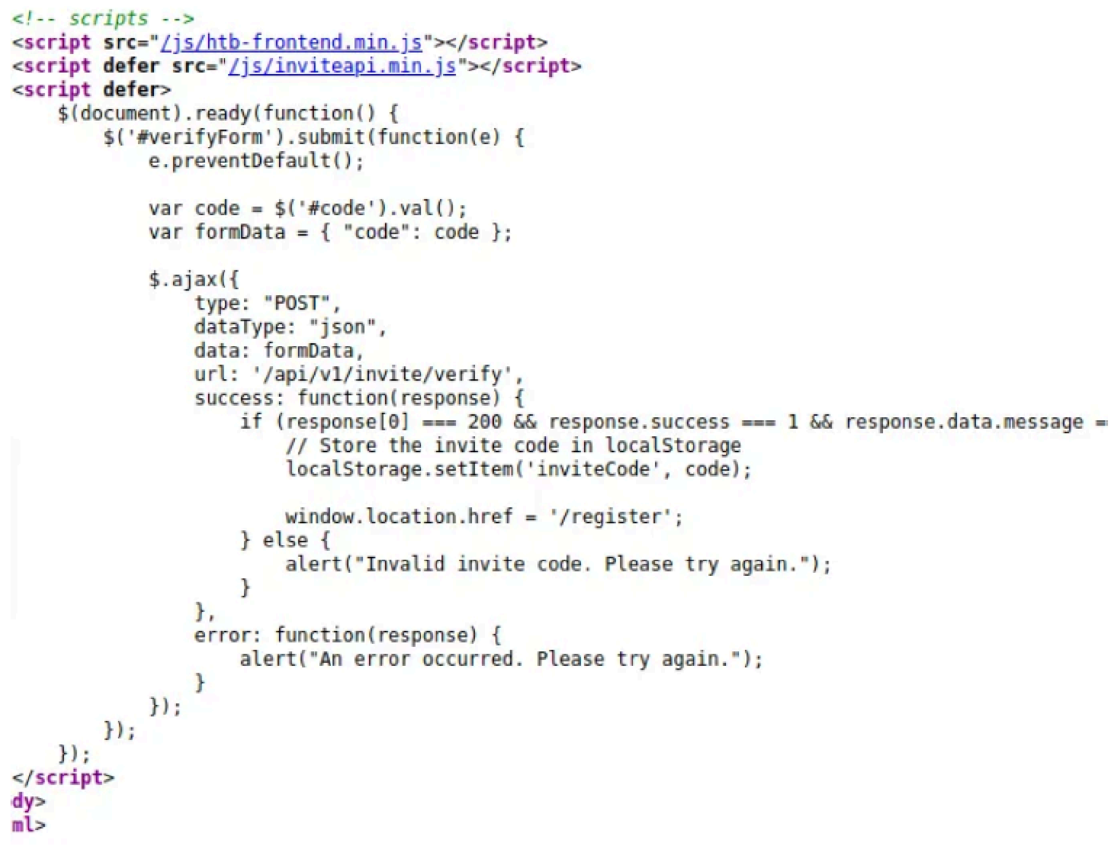
Intro: I completed my first HackTheBox Machine with my Foundations of Cybersecurity Professor. This was part of a weekly series where we collaborated with two other students to solve machines and complete HackTheBox Academy Challenges! This challenge was performed virtually via my Professor's computer so I was not able to recover the burpsuite screenshots from this challenge.

Start: We connected to this box via openvpn and started with a simple nmap scan

nmap -sC -sV -pN -v 10.10.11.221

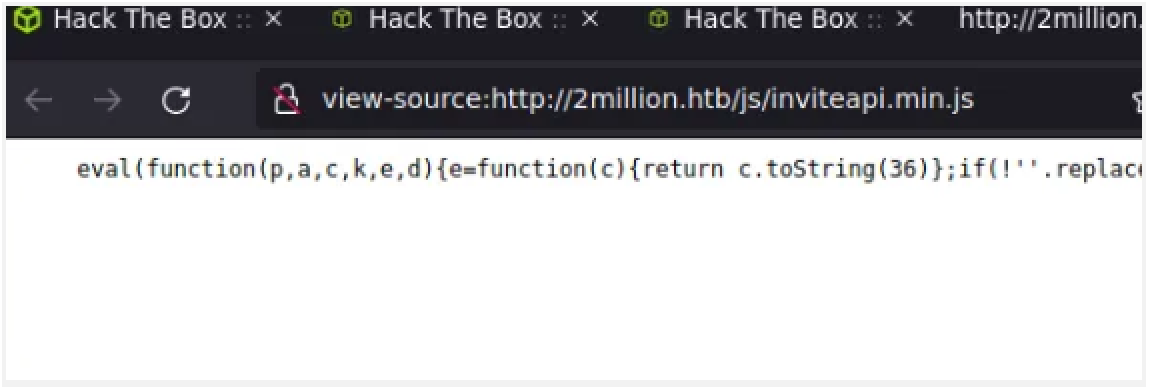
Where we got 2 ports one on ssh port 22 and the other on http port 80. At this point we went over to the website accessed via port 80, http://2million.htb/

First by looking at the source code, we saw that a POST request was being made towards /api/v1/invite/verify.



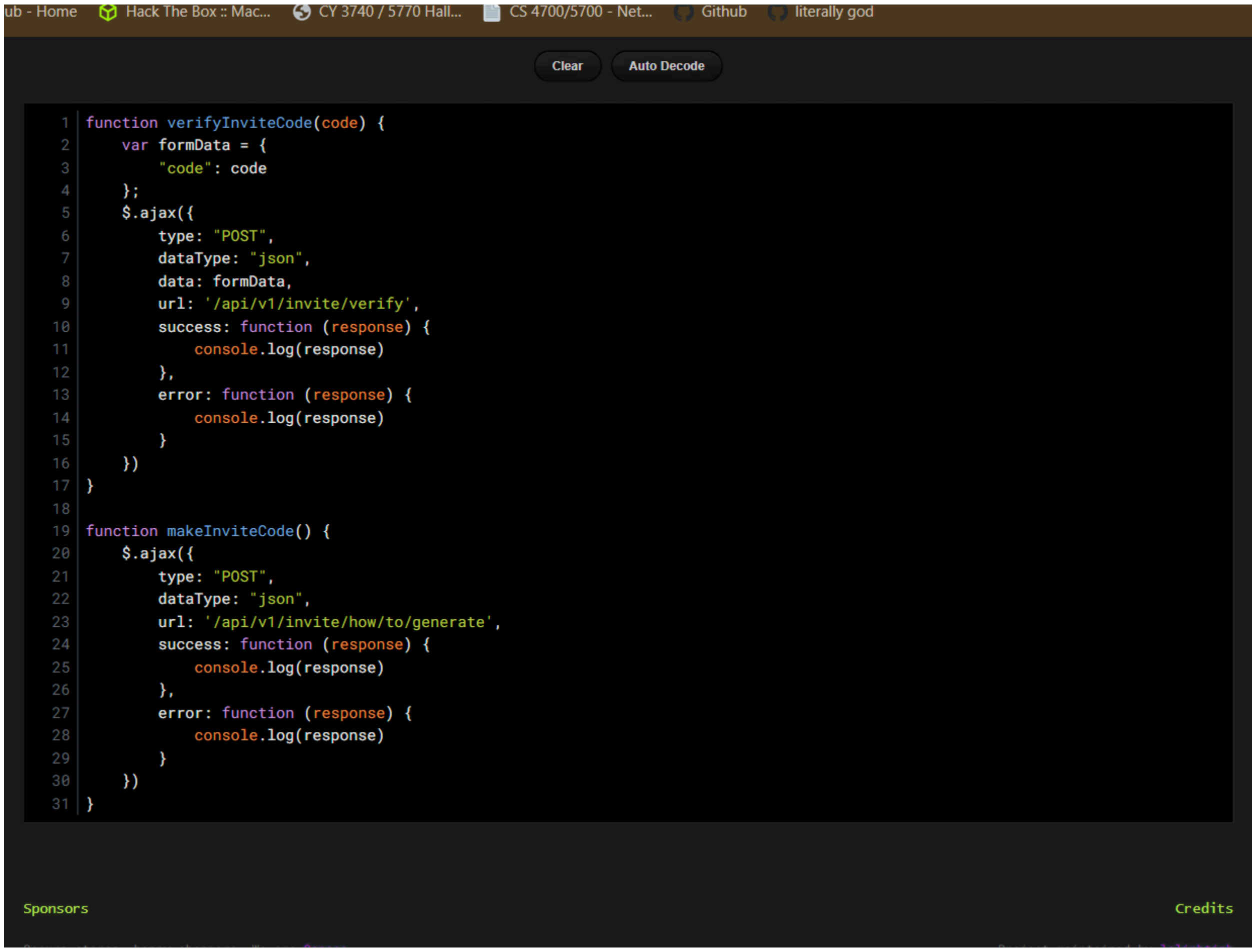
```
<!-- scripts -->
<script src="/js/htb-frontend.min.js"></script>
<script defer src="/js/inviteapi.min.js"></script>
<script defer>
    $(document).ready(function() {
        $('#verifyForm').submit(function(e) {
            e.preventDefault();

            var code = $('#code').val();
            var formData = { "code": code };

            $.ajax({
                type: "POST",
                dataType: "json",
                data: formData,
                url: '/api/v1/invite/verify',
                success: function(response) {
                    if (response[0] === 200 && response.success === 1 && response.data.message =
                        // Store the invite code in localStorage
                        localStorage.setItem('inviteCode', code);

                        window.location.href = '/register';
                    } else {
                        alert("Invalid invite code. Please try again.");
                    }
                },
                error: function(response) {
                    alert("An error occurred. Please try again.");
                }
            });
        });
    });
</script>
dy>
ml>
```

We additionally found a script called "inviteapi.min.js"



```
eval(function(p,a,c,k,e,d){e=function(c){return c.toString(36)};if(!''.replac
```

We put this in a deobfuscator and got



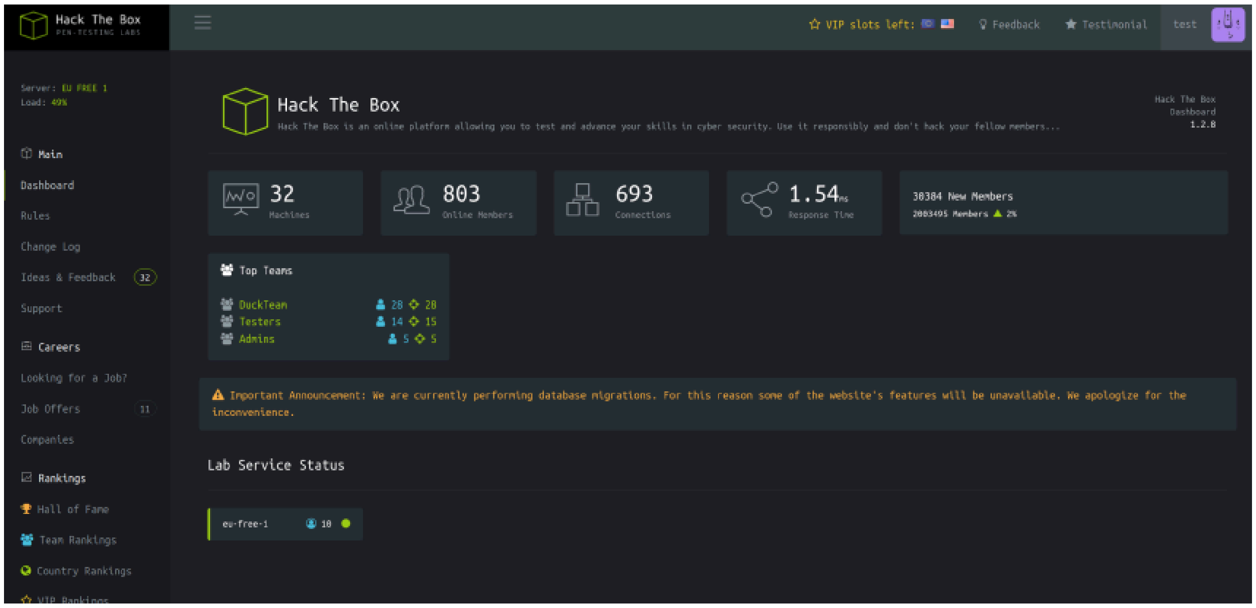
```
function verifyInviteCode(code) {
    var formData = {
        "code": code
    };
    $.ajax({
        type: "POST",
        dataType: "json",
        data: formData,
        url: '/api/v1/invite/verify',
        success: function (response) {
            console.log(response)
        },
        error: function (response) {
            console.log(response)
        }
    })
}

function makeInviteCode() {
    $.ajax({
        type: "POST",
        dataType: "json",
        url: '/api/v1/invite/how/to/generate',
        success: function (response) {
            console.log(response)
        },
        error: function (response) {
            console.log(response)
        }
    })
}
```

At this point Devin suggested bringing up Burp Suite so we could try and find vulnerable endpoints. From this we were able to put in /api/v1/invite/how/to/generate into the repeater and we saw that we got an encrypted ROT13 cipher, put it into cyberchef and got the hint “In order to generate the invite code, make a POST request to /api/v1/invite/generate”

So we edited a post request through our repeater POST /api/v1/invite/generate HTTP/1.1. Our response was a base64 encoded string “U1oyN0ktUTVaOVMtREtOSVgtUDNDU00=”

Which we decoded in cyberchef to get the invide code: SZ27I-Q5Z9S-DKNIX-P3CSM

After logging in, we were redirected to home.



Hack The Box

Hack The Box is an online platform allowing you to test and advance your skills in cyber security. Use it responsibly and don't hack your fellow members...

Hack The Box
Dashboard
1.2.8

32 Machines | 803 Online Members | 693 Connections | 1.54ms Response Time | 38384 New Members, 2083495 Members ▲ 2%

Top Teams

DuckTeam	28	28
Testers	14	15
Admins	5	5

Important Announcement: We are currently performing database migrations. For this reason some of the website's features will be unavailable. We apologize for the inconvenience.

Lab Service Status

eu-free-1 10 ●

From here our professor gave us the hint to go to the Access page and we noticed that the button allows a user to Download and Regenerate their VPN file to be able to access the HTB infrastructure in the same way we did to originally access the box. Upon clicking on the button a GET request is sent out to /api/v1/users/vpn/generate and in return the VPN file for our current user is downloaded.

We found out that by requesting /api we could see versions of the VPN and furthermore by requesting /api/v1 through burpsuite. we could enumerate all our endpoints.

We then set a get request to /api/v1/admin/auth (one of our enumerated endpoints) and noticed that the admin authentication is a simple JSON data with a message variable.

From here we simply changed the Content-Type of the request and sent it back through the repeater where our response was that we were missing an email parameter. We sent in our email and then our new response was that we were missing the is_admin variable, which we then set to true and sent back to the repeater.

Once we were admin we had to utilize a command injection (which at this point I fully did not understand), as it required a more complex understanding of uid, guid, and euid. Nevertheless my peers were able to successfully send in commands such as ‘whoami’ to find the user www-data and then set up a reverse shell listener, and send in a base64 encoded payload to access the machine through www-data.

When we explored the filesystem we noticed that it has a .env file which shows passwords for users. We can use password reuse to gain users. And were able to get admin’s password. With this we exited the shell and then ssh’ed through port 22 back into the machine with admin’s credentials.

After logging into the machine it notified us that we had mail. So we cd'd /var/mail/admin and this is where we got the hint to utilize the CVE in the box description. So we cloned the CVE into our machine and then ran it as instructed in the README.md (CVE-2023-0386 ./exp) After running it we get root and receive the thankyou.json text that we simply decoded through cyberchef to get our final flag!

Reflection: This machine initially left me feeling discouraged, it revealed how much I had yet to learn and felt overwhelming. I had never used Burpsuite before and was unfamiliar with the CVE framework, this was my first time actually seeing a CVE come into play when exploiting a machine. However, I'm grateful that it introduced me to web application security. Moving forward, I aim to develop my skills with curl commands and Burpsuite proxy configurations.