Common Pitfalls

While performing penetration tests or attacking HTB boxes/labs, we may make many common mistakes that will hamper our progress. In this section, we will discuss some of these common pitfalls and how to overcome them.

VPN Issues

We may sometimes face issues related to VPN connections to the HTB labs network. First, we should ensure that we are indeed connected to the HTB network.

Still Connected to VPN

The easiest method of checking if we have successfully connected to the VPN network is by checking whether we have `Initialization Sequence Completed` at the end of our VPN connection messages:

Still Connected to VPN

```
MichaelLuka@htb[/htb]$ sudo openvpn ./htb.ovpn

...SNIP...

Initialization Sequence Completed
```

Getting VPN Address

Another way of checking whether we are connected to the VPN network is by checking our VPN `tun0` address, which we can find with the following command:

Getting VPN Address

```
MichaelLuka@htb[/htb]$ ip -4 a show tun0

6: tun0: <POINTOPOINT,MULTICAST,NOARP,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state UNKNOWN group default qlen
    inet 10.10.10.1/23 scope global tun0
       valid_lft forever preferred_lft forever
```

As long we get our IP back, then we should be connected to the VPN network.

Checking Routing Table

Another way to check for connectivity is to use the command `sudo netstat -rn` to view our routing table:

Checking Routing Table

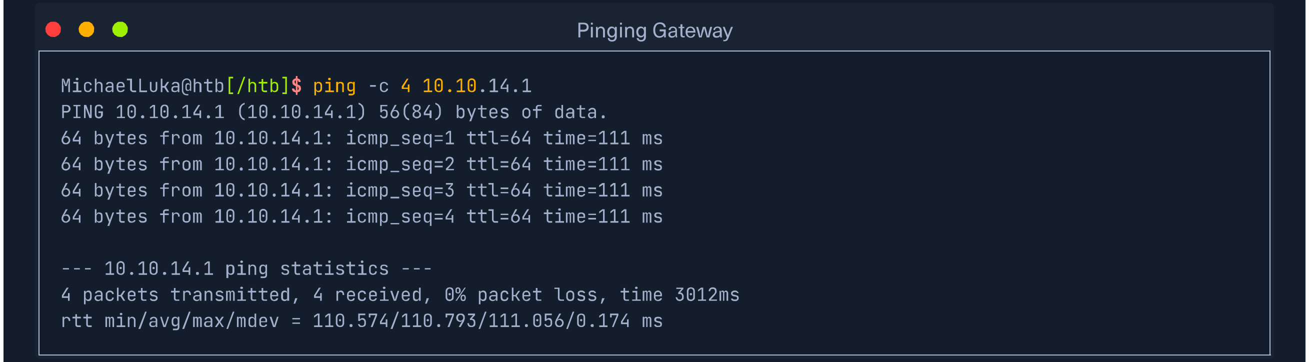
```
MichaelLuka@htb[/htb]$ sudo netstat -rn

[sudo] password for user:

Kernel IP routing table
Destination     Gateway         Genmask         Flags   MSS Window  irtt Iface
0.0.0.0         192.168.195.2   0.0.0.0         UG        0 0          0 eth0
10.10.14.0      0.0.0.0         255.255.254.0   U         0 0          0 tun0
10.129.0.0      10.10.14.1      255.255.0.0     UG        0 0          0 tun0
192.168.1.0   0.0.0.0         255.255.255.0   U         0 0          0 eth0
```

Pinging Gateway

From here, we can see that we are connected to the `10.10.14.0/23` network on the `tun0` adapter and have access to the `10.129.0.0/16` network and can ping the gateway `10.10.14.1` to confirm access.



Pinging Gateway

```
MichaelLuka@htb[/htb]$ ping -c 4 10.10.14.1
PING 10.10.14.1 (10.10.14.1) 56(84) bytes of data.
64 bytes from 10.10.14.1: icmp_seq=1 ttl=64 time=111 ms
64 bytes from 10.10.14.1: icmp_seq=2 ttl=64 time=111 ms
64 bytes from 10.10.14.1: icmp_seq=3 ttl=64 time=111 ms
64 bytes from 10.10.14.1: icmp_seq=4 ttl=64 time=111 ms

--- 10.10.14.1 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3012ms
rtt min/avg/max/mdev = 110.574/110.793/111.056/0.174 ms
```

Finally, we can either attack an assigned target host on the 10.129.0.0/16 network or begin enumeration for live hosts.

Working on Two Devices

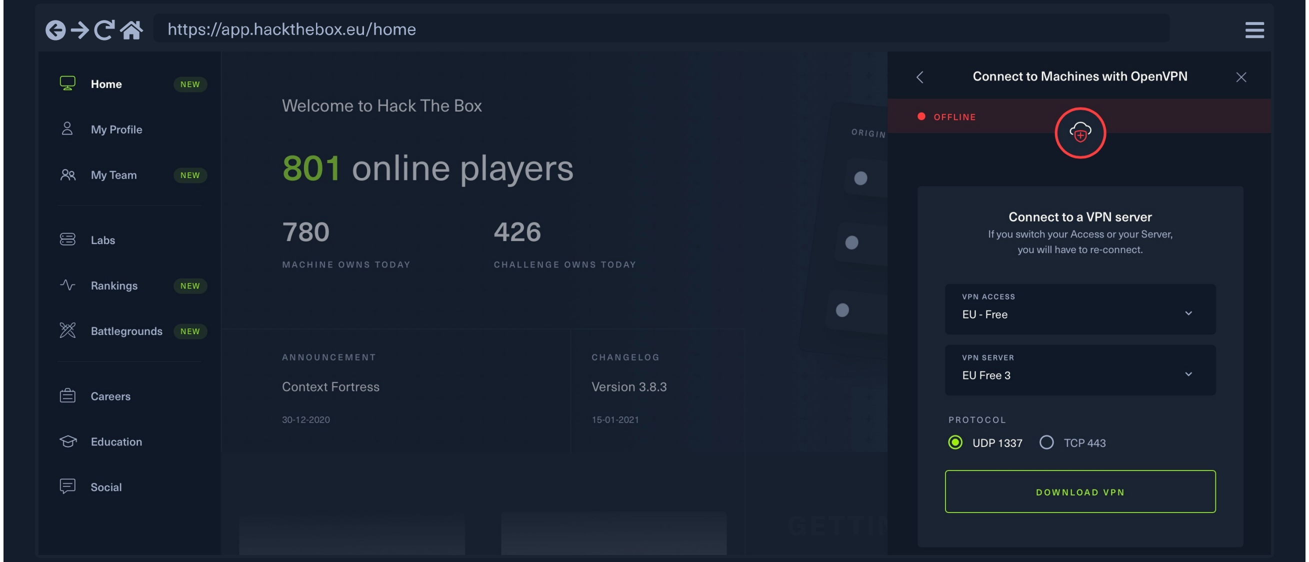
The HTB VPN cannot be connected to more than one device simultaneously. If we are connected on one device and try to connect from another device, the second connection attempt will fail.

For example, this can happen when our VPN connection is connected in our PwnBox, and then we try to connect to it from our Parrot VM at the same time. Alternatively, perhaps we are connected on our Parrot VM, and then we want to switch to a Windows VM to test something.

Checking Region

If we feel a noticeable lag in our VPN connection, such as latency in pings or ssh connections, we should ensure that we are connected to the most appropriate region. HTB provides VPN servers worldwide, in `Europe`, `USA`, `Australia`, and `Singapore`. Ideally, it would help if we tried to connect to the server closest to us to get the best possible connection.

To change our VPN Server, go to HackTheBox, click on the top-right icon that says `Lab Access` or `Offline`, click on `Labs`, and then click on `OpenVPN`. Once we do, we should be able to pick our VPN server location and pick any of the servers within that region:



https://app.hackthebox.eu/home

Connect to Machines with OpenVPN

OFFLINE

Connect to a VPN server

If you switch your Access or your Server, you will have to re-connect.

VPN ACCESS: EU - Free

VPN SERVER: EU Free 3

PROTOCOL: ● UDP 1337 ○ TCP 443

Note: Users with a free subscription only can connect to 1-3 free servers in each region. Users with a VPN subscription can connect to VIP servers, which provide a faster connection with less traffic.

to VIP servers, which provide a faster connection with less traffic.

VPN Troubleshooting

In case we face any technical issues when connecting to the VPN, we can find detailed guidance on troubleshooting VPN connections on this HackTheBox Help page.

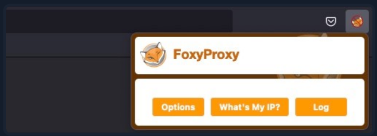
Burp Suite Proxy Issues

Burp Suite is a crucial tool during web application penetration tests (as well as other assessment types). Burp Suite is a web application proxy and can cause a few issues on our systems.

Not Disabling Proxy

When we turn the Burp proxy in our browser, Burp will start to capture our traffic and intercept our requests. This will make it stop any requests we make in the browser, i.e., visiting a page until we go to Burp, examine the request, and forward the request.

A common pitfall is forgetting to turn off the browser proxy after closing Burp, so it keeps intercepting our requests. If this happens, we will see that our browser is not loading any pages, so we should check if the browser proxy is still on. We can do that by clicking on the `Foxy Proxy` plugin icon in `Firefox`, and making sure it's set to `Turn Off`:



If we are not using a plugin like `Foxy Proxy`, we can check the browser's connection settings and make sure the proxy is turned off. Once we do, we should be able to continue browsing without any issues.

Changing SSH Key and Password

In case we start facing some issues with connecting to SSH servers or connecting to our machine from a remote server, we may want to renew or change our SSH key and password to make sure they are not causing any issues. We can do this with the `ssh-keygen` command, as follows:

Not Disabling Proxy

```
MichaelLuka@htb[/htb]$ ssh-keygen

Generating public/private rsa key pair.
Enter file in which to save the key (/home/parrot/.ssh/id_rsa):
Enter passphrase (empty for no passphrase):
Enter same passphrase again:

Your identification has been saved in /home/parrot/.ssh/id_rsa
Our public key has been saved in /home/parrot/.ssh/id_rsa.pub
The key fingerprint is:
SHA256:...SNIP... parrot@parrot
The key's randomart image is:
+---[RSA 3072]----+
|             o..  |
|      ...SNIP     |
|      ...SNIP     |
|      ...SNIP     |
|      ...SNIP     |
|      ...SNIP     |
|      ...SNIP     |
|        + +oo+o   |
+----[SHA256]-----+
```

By default, SSH keys are stored in the `.ssh` folder within our home folder (for example, `/home/htb-student/.ssh`). If we wanted to create an ssh key in a different directory, we could enter an absolute path for the key when prompted. We can encrypt our SSH key with a password when prompted or keep it empty if we do not want to use a password.

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