Networks Fundamentals II Homework: In a Network Far, Far Away!

Mission 1

nslookup starwars.com
Server: mynetwork
Address: 192.168.2.1

Non-authoritative answer:
Name: starwars.com
Addresses: 2001:4958:304::b896:4638
        2001:4958:304::b896:4608
        184.150.70.8
        184.150.70.56

So after using NSLOOKUP to check the mail servers this is the result.
nslookup -type=mx starwars.com
Server: mynetwork
Address: 192.168.2.1

Non-authoritative answer:
starwars.com   MX preference = 10, mail exchanger = aspmx3.googlemail.com
starwars.com   MX preference = 5, mail exchanger = alt2.aspmx.l.google.com
starwars.com   MX preference = 5, mail exchanger = alt1.aspx.l.google.com
starwars.com   MX preference = 10, mail exchanger = aspmx2.googlemail.com
starwars.com   MX preference = 1, mail exchanger = aspmx.l.google.com

These MX servers were matched to the new primary mail server that the Resistance's network team build which is 'asltx.l.google.com' and the secondary 'asltx.2.google.com', after comparing these to the MX record I conclude that there's configuration issue since the new mail servers don't match with the MX record for starwars.com domain.

The corrected DNS record will have the new primary mail server as `asltx.l.google.com` and the secondary as `asltx.2.google.com`.

Mission 2

When we check the SPF records for theforce.net we get the result;
nslookup -type=txt
Non-authoritative answer:
theforce.net text =

"v=spf1 a mx mx:smtp.secureserver.net include:aspmx.googlemail.com ip4:104.156.250.80 ip4:45.63.15.159 ip4:45.63.4.215"
"
Which means 104.156.250.80, 45.63.15.159 and 45.63.4.215 are the IP addresses of mail servers allowed to send emails on its behalf.

Now if starwars.com is getting the emails from them with the their new IP 45.23.176.21 it is automatically going to spam since when the receiving email server at starwars.com receives the email, it completes the following steps:

1. Check the sending mail server's IP address, `45.23.176.21`.

2. Validates the DNS record of theforce.net's SPF record to confirm the sending mail server's IP address is either `104.156.250.80 or 45.63.15.159 or 45.63.4.215`.

3. Since the sender's IP is `45.23.176.21` (not `104.156.250.80 or 45.63.15.159 or 45.63.4.215`), starwars.com's mail server can identify the email as spam and potentially reject it or send it to the recipient's spam folder.

The corrected DNS Text Record would contain the IP 45.23.176.21 in the SPF record.

Mission 3

When we look up the cname for www.theforce.com ;
nslookup -type=cname www.theforce.net
Server: mynetwork
Address: 192.168.2.1

Non-authoritative answer:
www.theforce.net canonical name = theforce.net

We get the canonical name as theforce.net, and because the domain of the sub page isn't the cname = theforce.net it is not redirecting to www.theforce.net , also by running the nslookup on resistance.theforce.com I determined its not even a valid domain name.

If we correct the DNS record, the cname for theforce.com should be updated to resistance.theforce.com.

Mission 4

The NS record for princessleia.site;

nslookup -type=ns princessleia.site
Server: mynetwork
Address: 192.168.2.1

Non-authoritative answer:
princessleia.site nameserver = ns25.domaincontrol.com
princessleia.site nameserver = ns26.domaincontrol.com
This confirms which server contains actual DNS records for the domain 'princessleia.site'.

We can update the DNS server and add the backup server 'ns2.galaxybackup.com' to the NS record.

Mission 5

OSPF Shortest path from Batuu to Jedha is Batuu> D > C >E > F > J > M > L > Q > T > V >Jedha which is 29, and this path does not contain Planet N in its route.

Mission 6

I ran
aircrack-ng -w /usr/share/wordlists/rockyou.txt Darkside.pcap
Opening Darkside.pcap
Read 586 packets.

#	BSSID	ESSID	Encryption
1	00:0B:86:C2:A4:85	linksys	WPA (1 handshake)

Choosing first network as target.

Opening Darkside.pcap
Reading packets, please wait...

Aircrack-ng 1.2 rc4

[00:00:01] 2280/8053877 keys tested (1574.03 k/s)

Time left: 1 hour, 25 minutes, 15 seconds 0.03%

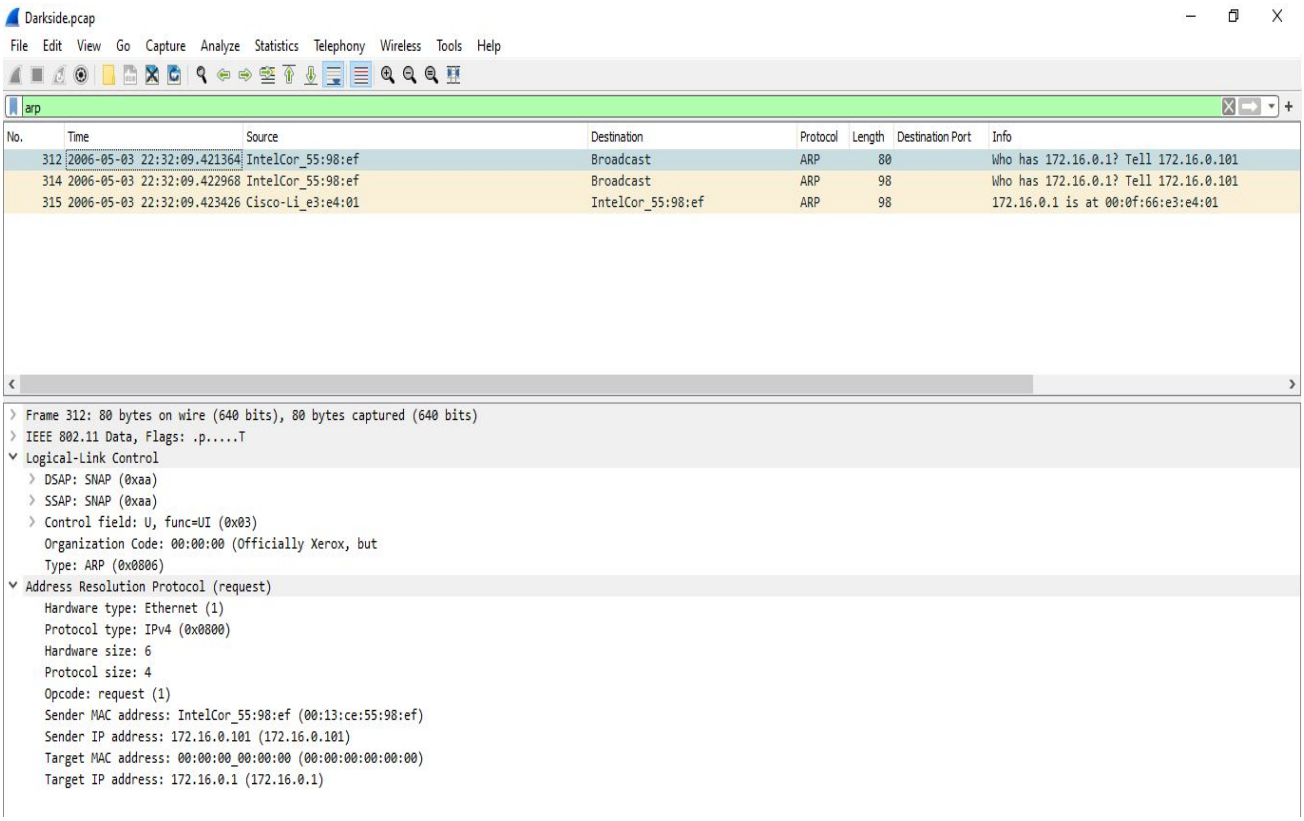
KEY FOUND! [dictionary]

Master Key : 5D F9 20 B5 48 1E D7 05 38 DD 5F D0 24 23 D7 E2
52 22 05 FE EE BB 97 4C AD 08 A5 2B 56 13 ED E2

Transient Key : 1B 7B 26 96 03 F0 6C 6C D4 03 AA F6 AC E2 81 FC
55 15 9A AF BB 3B 5A A8 69 05 13 73 5C 1C EC E0
A2 15 4A E0 99 6F A9 5B 21 1D A1 8E 85 FD 96 49
5F B4 97 85 67 33 87 B9 DA 97 97 AA C7 82 8F 52

EAPOL HMAC : 6D 45 F3 53 8E AD 8E CA 55 98 C2 60 EE FE 6F 51

Using the key ‘dictionary’ I decrypted the 802.11 packets captured on the Darkside.pcap file, by editing the Decryption Keys on IEEE 802.11. Then after filtering for ARP packets i determined the Host Mac Address as 00:0f:66:e3:e4:01 and IP address as 172.16.8.1.



Mission 7

I ran nslookup -type=txt princessleia.site
nslookup -type=txt princessleia.site
Server: 127.0.0.53
Address: 127.0.0.53#53

Non-authoritative answer:
princessleia.site text = "Run the following in a command line: telnet towel.blinkenlights.nl or as a backup access in a browser: www.asciimation.co.nz"

Authoritative answers can be found from:

Then ran, ‘telnet towel.blinkenlights.nl’ and got this;