Cybersecurity

Networking II Challenge Submission File

In a Network Far, Far Away!

Make a copy of this document to work in, and then for each mission, add the solution below the prompt. Save and submit this completed file as your Challenge deliverable.

Mission 1

1. Mail servers for starwars.com:

```
1) aspmx.l.google.com

2): alt2.aspmx.l.google.com

3)aspmx3.googlemail.com

4)aspmx2.googlemail.com

5) alt2.aspmx.l.google.com
```

2. Explain why the Resistance isn't receiving any emails:

```
The DNS records appear correctly set up with multiple mail servers. Yet,
there could be a problem with the Resistance's mail server configuration or
connectivity. It is recommended to inspect the mail server logs for errors
or connectivity issues.
```

3. Suggested DNS corrections:

> Confirm that the Resistance's mail server configuration enables successful communication with the designated Google mail servers. Investigate for any potential firewall or network issues that could hinder incoming emails.

Mission 2

1. Sender Policy Framework (SPF) of `theforce.net`:

```
theforce.net    text = "v=spf1 a mx a:mail.wise-advice.com
mx:smtp.secureserver.net include:aspmx.googlemail.com ip4:45.63.15.159
ip4:45.63.4.215  ~all"
```

2. Explain why the Force's emails are going to spam:

```
An incomplete or outdated SPF record can cause email servers to consider
messages unauthorized, resulting in their classification as spam
```

3. Suggested DNS corrections:

```
Ensure SPF record includes all sources. Verify and update A, MX records. Add
current mail server IP (45.23.176.21) to SPF. Regularly review and update
DNS for optimal functionality.
```

Mission 3

1. Document the CNAME records:

```
Server:          192.168.1.1
Address:         192.168.1.1#53

Non-authoritative answer:
```

```
www.theforce.net          canonical name = theforce.net.
```

2. Explain why the subpage `resistance.theforce.net` isn't redirecting to `theforce.net`:

```
DNS server cannot find a record for "resistance.theforce.net." This could be
the reason for the subpage not redirecting to "theforce.net."
```

3. Suggested DNS corrections:

```
Create a DNS entry for the subpage by adding a CNAME record for
"resistance.theforce.net" that points to the canonical name or alias linked
with "theforce.net." After updating the DNS configuration, the subpage
should redirect accurately to the main domain.
```

Mission 4

1. Confirm the DNS records for `princessleia.site`:

```
Server:         192.168.1.1

Address:        192.168.1.1#53

Non-authoritative answer:

princessleia.site       nameserver = ns26.domaincontrol.com.

princessleia.site       nameserver = ns25.domaincontrol.com.

Authoritative answers can be found from:

ns25.domaincontrol.com  internet address = 97.74.102.13

ns26.domaincontrol.com  internet address = 173.201.70.13
```

2. Suggested DNS record corrections to prevent the issue from occurring again:

Regularly update and monitor DNS records, ensuring accurate IP addresses.
Implement DNSSEC for added security against malicious activities. Explore
CDN usage for content distribution and performance enhancement. Verify DNS
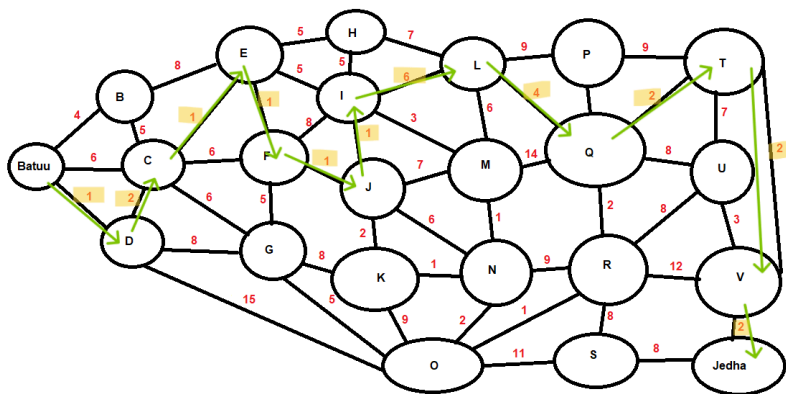provider settings.

Mission 5

1. Document the shortest `OSPF` path from Batuu to Jedha:

    a. `OSPF` path:

BATUUD→C→E→F→J→I→L→Q→T→V→JEDHA

    b. `OSPF` path cost:

1+2+1+1+1+1+6+4+2+2+2=23

Mission 6

1. Wireless key:

```
KEY FOUND! [ dictionary ]
```

2. Host IP addresses and MAC addresses:

  a. Sender MAC address:

```
Sender MAC address: 00:0f:66:e3:e4:01 (00:0f:66:e3:e4:01)
```

  b. Sender IP address:

```
Sender IP address: 172.16.0.1 (172.16.0.1)
```

  c. Target MAC address:

```
Target MAC address: 00:13:ce:55:98:ef (00:13:ce:55:98:ef)
```

  d. Target IP address:

```
Target IP address: 172.16.0.101 (172.16.0.101)
```

Mission 7

1. Screenshot of results: