**CA2 Network Set up using packet tracer.**

**35% of your overall CA marks**

Configure a network that includes the following devices:

5 end user devices (laptops, PCs, etc.)

1 web server

1 DHCP server

1 router

1 mail server

**Device Configuration:**

***Web Server Configuration***

IP Configuration: Static

Functionality: The web server should provide access to web pages.

Tip: You can access the web server’s web pages by selecting the server > services > HTTP.

IP Address: Configure the IP address statically within the network range you select (based on the last digit of your student number).

Example: ‘192.168.2.10’

***DHCP Server Configuration***

IP Configuration: Static

Functionality: The DHCP server will assign dynamic IP addresses to enduser devices (laptops/PCs).

IP Address: Assign a static IP within your chosen network’s range.

Example: ‘192.168.2.20’

End User Devices Configuration

Total Devices: 5 devices (laptops, PCs, etc.)

3 Devices: Should use DHCP to obtain their IP configurations.

2 Devices: Must have static IP addresses.

Example Configuration:

DHCP Devices:

Device 1: ‘192.168.2.21’ (Automatically assigned via DHCP)

Static IP Devices:

Device 4: ‘192.168.2.30’ (Static IP)

Ensure: Each device can ping each other and access the web server.

**Router Configuration**

Router IP Configuration: Static IP on at least two interfaces: one for the internal network and one for the external or "internet" side.

Example Configuration:

Internal (LAN side): ‘192.168.2.1’

External (WAN side): ‘192.168.100.1’ (Assuming a private network or configure as needed).

Functionality: The router should route traffic between the internal devices and external networks (e.g., simulate internet access or another subnet).

**Mail Server Configuration**

IP Configuration: Static

Functionality: The mail server should be set up to handle email traffic (using SMTP, IMAP, or POP3).

Example Configuration:

IP Address: ‘192.168.2.50’

Services to Enable: SMTP, IMAP (Configure via Packet Tracer’s Services tab for Mail server settings).

Network Selection:

Based on the last digit of your student number, choose one of the following network subnets for all your network devices:

|  |  |
| --- | --- |
| **Last Digit** | **Network Subnet** |
| 1 | 192.168.1.0/24 |
| 2 | 192.168.2.0/24 |
| 3 | 192.168.3.0/24 |
| 4 | 192.168.4.0/24 |
| 5 | 192.168.5.0/24 |
| 6 | 192.168.6.0/24 |
| 7 | 192.168.7.0/24 |
| 8 | 192.168.8.0/24 |
| 9 | 192.168.9.0/24 |
| 0 | 192.168.0.0/24 |
|  |  |

The subnet mask for each network should be ‘/24’ (255.255.255.0).

**Follow-up Questions:**

Why must the Web, DHCP, and Mail Server devices be configured with static IP configurations?

What is the role of a default gateway in your network, and why must the router be configured with the default gateway IP address?

What is the difference between a static route and a dynamic routing protocol and in what scenario would you use each on the router?