ACTIVITY 4

WORKSHOP WEEK 4 – CONFIGURING STATIC ROUTES

INTRODUCTION

This report documents the process and outcomes of configuring static routes within a network of three routers. The primary objective was to manually set up static routes to enable effective communication between routers that are not directly connected. This exercise demonstrated the practical application of static routing in a small network where dynamic routing protocols are not necessary.

NETWORK TOPOLOGY AND INITIAL CONFIGURATION

The network setup for this activity included three routers connected as follows:

- **Router0** connected to **Router1** via its FastEthernet0/0 interface.
- **Router1** connected to **Router0** via FastEthernet0/0 and to **Router2** via FastEthernet0/1.
- **Router2** connected to **Router1** via its FastEthernet0/0 interface.

For proper communication, the IP addresses were assigned as follows:

- **Router0:** The FastEthernet0/0 interface was configured with the IP address 192.168.1.1.
- **Router1:** The FastEthernet0/0 interface was assigned 192.168.1.2, and the FastEthernet0/1 interface was assigned 192.168.2.1.
- **Router2:** The FastEthernet0/0 interface was set to 192.168.2.2.

These IP addresses and interface configurations were crucial for establishing connectivity between the routers.

STATIC ROUTE CONFIGURATION

Following the IP address setup, static routes were configured to enable communication between the routers and their respective networks:

1. **On Router0:** I configured a static route to enable Router0 to reach the 192.168.2.0/24 network via Router1. This involved specifying Router1's IP address (192.168.1.2) as the next hop for packets destined for the 192.168.2.0 network.
2. **On Router2:** I set up a static route to allow Router2 to reach the 192.168.1.0/24 network through Router1. This configuration required Router2 to use Router1's IP address (192.168.2.1) as the next hop for packets aimed at the 192.168.1.0 network.

These static routes were essential for ensuring that each router could route packets to networks beyond its direct connections.

TESTING THE CONFIGURATION

To verify the successful configuration of static routes, I conducted a connectivity test:

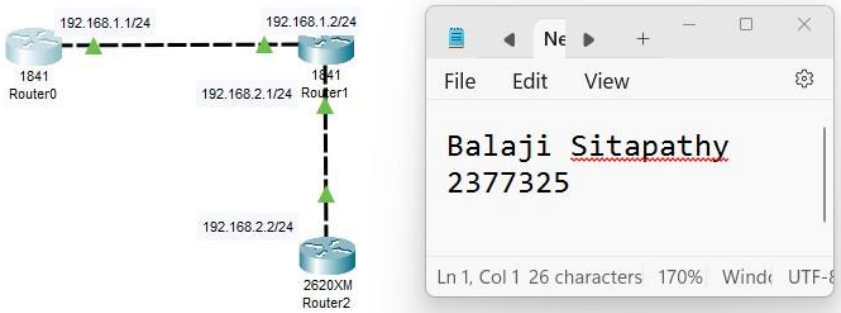
- **Ping Test:** I performed a ping test from Router0 to Router2 to ensure that Router0 could successfully communicate with Router2. I issued a ping command to Router2's IP address (192.168.2.2) from Router0. The ping test was successful, with Router0 receiving replies from Router2. This confirmed that the static routes were correctly configured and operational.

In the event of an initial failure in the ping test, I waited briefly to allow for any simulation delays and then retried the command. The successful ping responses validated the accuracy and effectiveness of the network configuration.

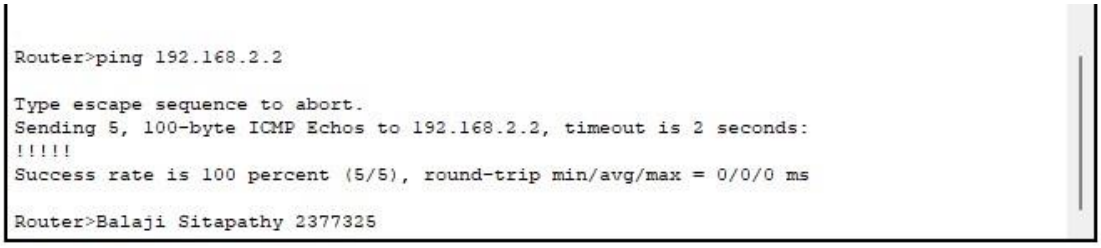
SCREENSHOTS AND DOCUMENTATION

For submission, I captured the following screenshots to document the configuration and testing:

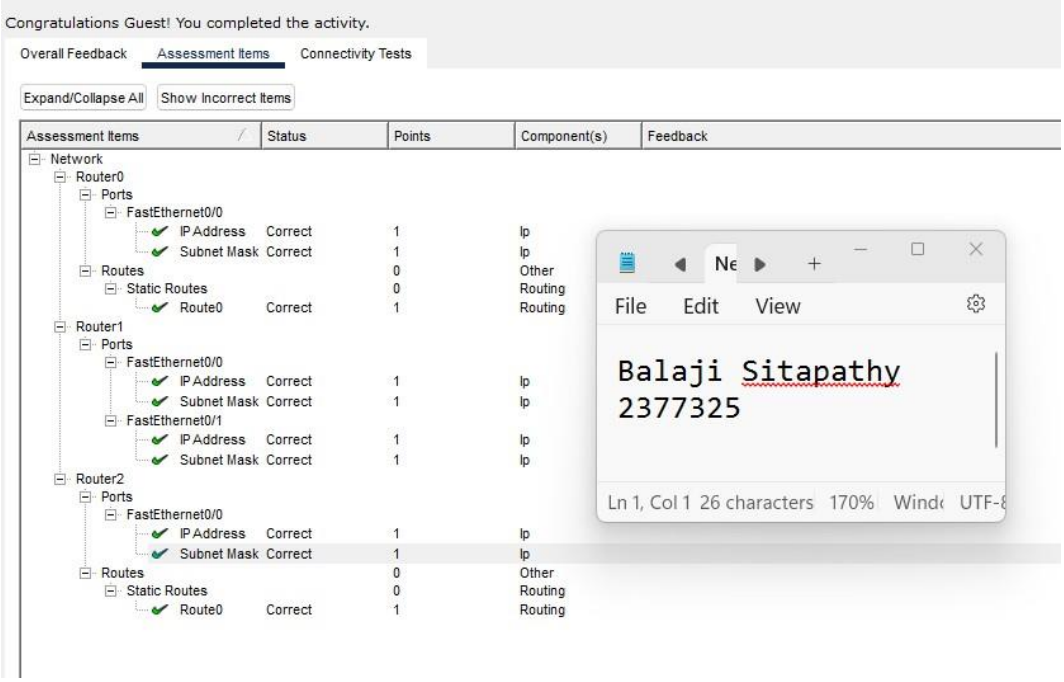
1. **Network Configuration:** A screenshot showing the network topology with all routers' IP addresses and connections configured correctly. My name and student number were included in the screenshot to identify the work.



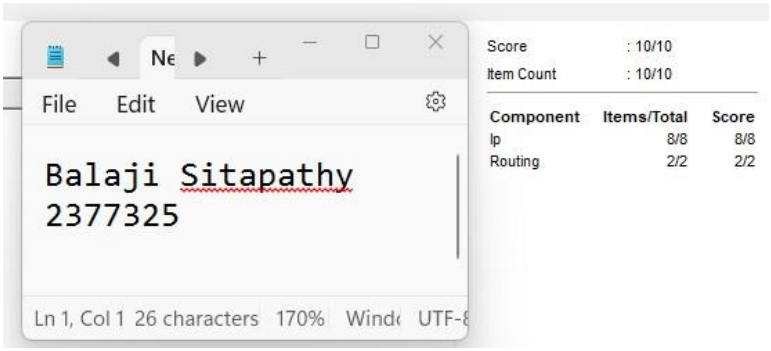
2. **Successful Ping:** A screenshot from Router0's command line interface showing the successful ping result to Router2. My name and student number were added to the command prompt output to verify the results.



3. **Assessment Items Tests Result:** A screenshot of the Packet Tracer assessment tab indicating that all tasks were completed successfully. This screenshot included my name and student number.



4. **Assessment Items Result Summary:** A screenshot showing the final assessment summary with all tests passed, including my name and student number to confirm the successful completion of the activity.



CONCLUSION

The static routing configuration activity effectively demonstrated the process of manually setting up and testing static routes in a small network. By configuring the routes and validating them through successful ping tests, I ensured that the network was correctly set up and operational. This exercise highlighted the practical benefits of static routing for straightforward network scenarios, providing a clear understanding of routing fundamentals.