BLM 3022 - Computer Networking Technologies

Lab 3 – STP

You are the network administrator for a large company. The company has three buildings, and each building has two floors. Each floor has a switch that connects to the router. The switches are connected to each other via trunk links, and there are redundant links between the switches to ensure network availability. You have been tasked with configuring the network to prevent loops and ensure redundancy.

Requirements:

1. Configure the switches using STP to prevent loops.

2. Ensure that each switch has a unique hostname and IP address.

3. Configure VLANs on each switch and ensure that VLAN traffic is isolated.

4. Configure a trunk link between the switches to allow traffic between VLANs.

5. Configure redundant links between the switches to provide network availability.

6. Verify that the network is functioning correctly using appropriate show and debug commands.

7. Create a topology diagram of the network showing the VLANs and connections.

8. Bonus: Implement Rapid Spanning Tree Protocol (RSTP) to reduce convergence time.

1. Create a topology diagram of the network showing the VLANs and connections. Label each device and interface.

2. Bonus: Implement RSTP to reduce convergence time.

Submission:

You should submit two files:

1. Your Packet Tracer file (.pkt) named LAB3-studentid1-studentid2.pkt

2. The report in PDF named LAB3-studentid1-studentid2.pdf.

Evaluation:

1. The network topology diagram.

2. A description of the configuration steps taken.

3. The output of the show commands used to verify the configuration.

4. A summary of the testing performed and the results obtained.

5. A description of the RSTP implementation, if attempted.