Computer Networks Lab (CS 353): Lab 10

1. Experiment 1 [5 marks]

In this assignment you will perform an experiment to understand the working of the Spanning Tree Protocol. The Spanning-Tree Protocol (STP) prevents loops from being formed when switches or bridges are interconnected via multiple paths. Switches exchange messages to detect loops, and then removes the loop by blocking selected bridge interfaces. It guarantees that there is one and only one active path between two network devices.

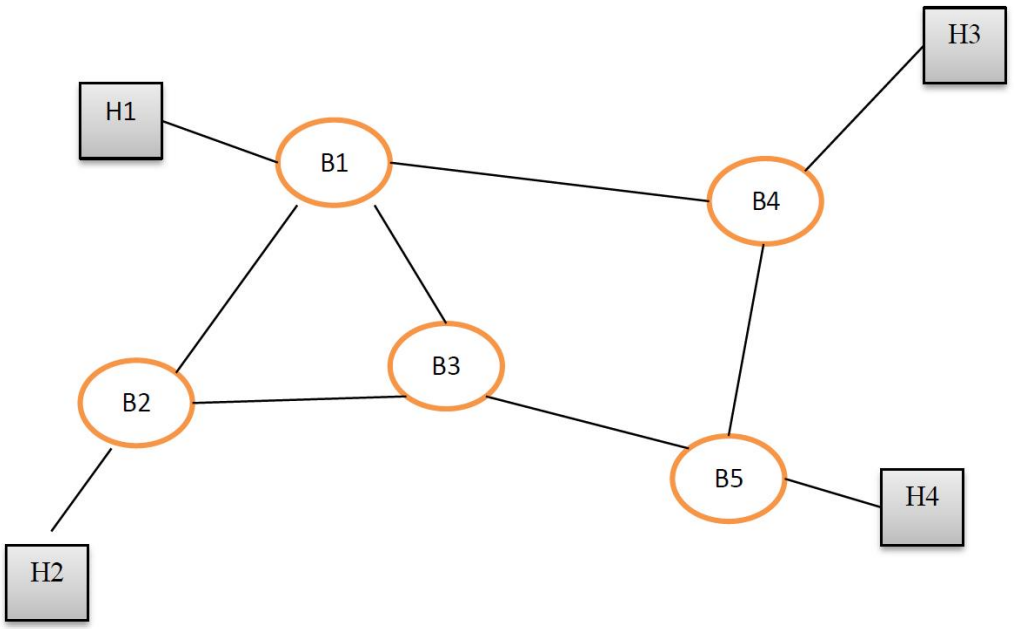
Consider the given network topology with five L2 switches. Edit the switch priorities as per the given figure. For an example, B1 will get priority 1 and B2 will get priority 2 and so on.

Create a custom application for source H2 to destination H4 with packet size 1000 bytes and inter-arrival time to 800 microsec. The start time parameter is set to 1 sec while configuring the application. Run the simulation for 10 sec.

1. Identify the designated ports and blocked ports.

2. Give the spanning tree.

3. Obtain the MAC address table for each switch



Experiment 2 [5 Marks]

Design a network scenario using a Layer-2 Switch where devices (Wired Nodes in NetSim) D1, D2 belong to VLAN1 and D3, D4 belong to VLAN2.

a. Create a broadcast application with D1 as the source. Document the frames received on both the VLANs.

b. Create a unicast application with D2 as the sender and D1 as the receiver. Determine the throughput, and the number of packets received in error.

c. Create a unicast application with D2 as the sender and D3 as the receiver. Determine the throughput of the network. Document your findings/observations.