

Computer Networks and Distributed Systems

Exercise Sheet 10

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Quiz questions

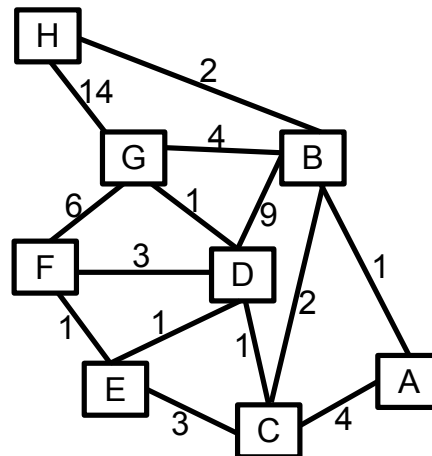
1. Describe the three different switching fabrics used.
2. Why are buffers necessary for input *and* output ports?
3. Suppose Host A sends a TCP segment encapsulated in an IP datagram to Host B. How can the network stack at B's side recognize that the packet should be processed by TCP (and not, say, UDP)?

Exercise 10.1

A 3400 byte datagram is to be transmitted via a connection with a MTU of 560 bytes. The original datagram has the ID 265. How many fragments are created? What information is required in their packet headers?

Exercise 10.2

Consider the following network:



Use the Dijkstra algorithm to determine the shortest paths according to the given costs from F to all other nodes of the network. Complete the table for the iterations of the algorithm:

Step	N	D(A)	D(B)	D(C)	D(D)	D(E)	D(G)	D(H)
...

Exercise 10.3

We consider unicast and multicast routing mechanisms. Show that the tree that is generated by Dijkstra's algorithm does not necessarily coincide with the optimal multicast routing tree.