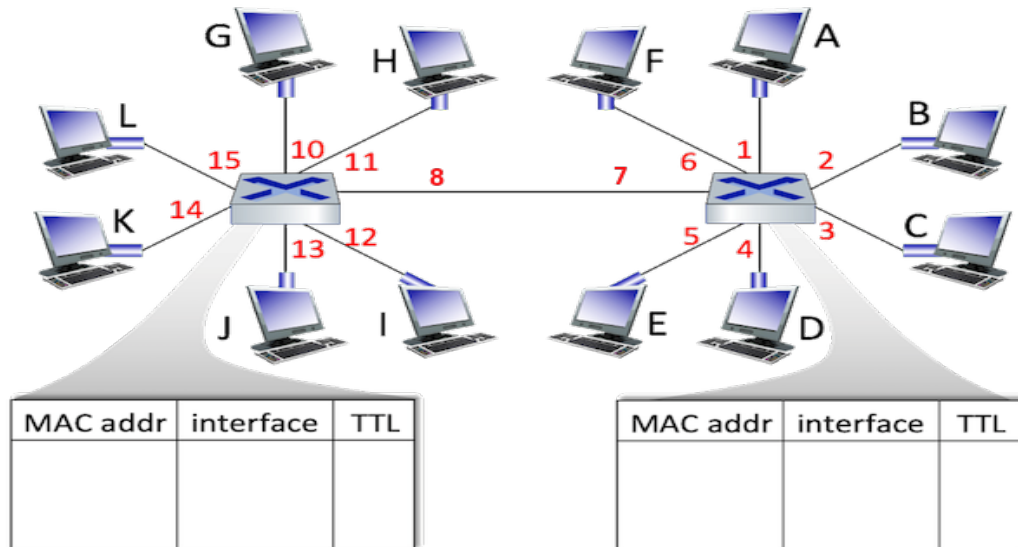


CS52222 Computer Networks and Internets

Tutorial 12 (Week 12), 2024

- 1) Suppose that the sender uses CRC with general polynomial $x^4 + x^2 + 1$ for error detection over a link. What is the bit string used as divisor (i.e. generator) for computing the CRC bits?
- 2) Consider the LAN below consisting of 10 computers connected by two self-learning Ethernet switches. At $t=0$ the switch table entries for both switches are empty. For each of the following frame transmissions (and their replies), state (1) what information the switches learn, and (2) to which hosts the frame will be forwarded.



- (a) $t=1$: C \rightarrow G, G \rightarrow C
 - (b) $t=2$: C \rightarrow D, D \rightarrow C
 - (c) $t=3$: B \rightarrow G, G \rightarrow B
- 3) Suppose that we are using the polling MAC protocol to control the access of 4 nodes to a broadcast channel. Assume that the channel has a transmission rate of 2 Mbps. There is an additional polling node (which notifies each of the nodes when it can

transmit in a round robin fashion), and the polling delay is $d_{poll} = 100$ msec. Each node can transmit 0.25 Mbits in each round. What is the length (in sec) of a polling round?