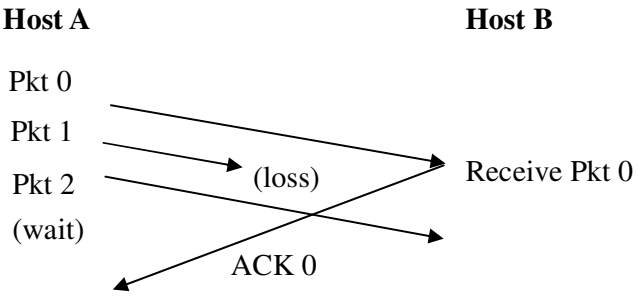
EE3009 Tutorial 9

(ARP, Flow Control, and Go-Back-N)

Problems:

1. Two hosts communicate with each other using a pipelined protocol with window size equal to *w*. Let the transmission rate of the link connecting the two hosts be 10 Mbps and the end-to-end delay be 12 msec. Suppose that each packet carries 10 Kbits. Find the maximum utilization of the link for the following cases:
   a) $w = 10$;
   b) $w = 20$;
   c) $w = 30$.

2. Suppose Host A uses Go-Back-N to send four packets (Pkt 0, 1, 2, and 3) to Host B. A window size of three is used. Complete the following diagram until Host A receives all the acknowledgements. Show the transmission of all data packets and acknowledgement packets. Indicate the packets discarded by Host B, if any.



Computer Exercise

3. In this exercise, you will examine the operation of the ARP protocol. Open the file "`Examine_ARP.pka`". Do the following:
   a) Perform Task 1 according to the instruction.
   b) Skip Task 2. Type "`arp -d`" to delete all entries in the table of `PC 1A`.
   c) Point to `PC 1B` and find its IP address.
   d) Enter Simulation mode. Verify that the **Event List Filters** display only ARP and ICMP events. Ping the IP address of `PC 1B`, which you have found in part (c). After issuing the command, click the **Auto Capture / Play** to capture the packets. When the **Buffer Full** window opens, click the **View Previous Events** button.
   e) Examine the ICMP packet at time 0.000. Click on the Info box and a window should occur. Click on Layer 3 and read the explanation. Then click on Layer 2 and read the explanation.
   f) Examine the next packet. Click on Layer 2 and read the explanation.
   g) Explain to the tutor what happens at time 0.004.
   h) Type "`arp -a`" at `PC 1A` to view its ARP table.