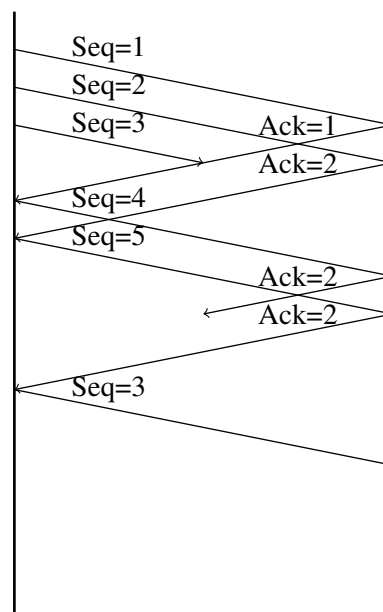


Problem Session 6: Networking

SOLUTION

Wednesday, May 6, 2020

1. Assume you are communicating over a TCP connection with a window size of 3. The client wants to send a sequence of five packets to the server. Assume that the packets each contain one byte, and the sequence number of the first packet is 1. Assume that the third packet sent by the client and the third ACK sent by the server get lost. What is the sequence of messages that will be exchanged by the client and the server?



2. Some researchers have proposed TCP variants that respond to congestion events by reducing their window size by a small constant amount. How would such protocols interact with existing TCP implementations?

Clients using the proposed version would monopolize the available bandwidth.

3. How would you modify the server code from your networking assignment to support multiple concurrent connections?

```
listen_sock = socket()
bind(listen_sock)
listen(listen_sock)

while(True):
    conn_sock = accept(listen_sock)
    if(fork() == 0):
        close(listen_sock)
        while(True):
            read(conn_sock)
            write(conn_sock)
            close(conn_sock)
            exit(1)
    else:
        close(conn_sock)

close(listen_sock)
return
```