Lecture 22 ()

man working in 9 companies during COVID time, police involved

1 Credit Based Flow Control (contd)

1. If t_D/t_f buffers are available, then A will never stall
2. But need to send 2x messages

2 On-Off Flow Control

Only send credit when number of free buffers falls below N_{off} or rises above N_{on}

2.1 Analysis

1. $N_{off} \geq t_D/t_f$ (can be determined using risky period - both flits and credit in transit)
2. $N - N_{on}$ should be greater than a threshold for efficiency: $N \geq 2t_D/t_f$

3 Circuit Switching

1. Reserve path from source to destination
2. On reservation, send message
3. After sending message, clear buffer

trunk calling still happens in Ethiopia

3.1 Space Time Diagram

1. Probing time: K cycles
2. Response time: K cycles
3. Sending time: $K + L/B - 1$
4. Total time = $3K + L/B - 1$

3.2 Pros and Cons

1. Good for bulk transfer
2. Terrible for single transfer
3. Locks up resources

4 Packet based Flow Control - Store and Forward

1. Receive entire packet at next router, then forward
2. Takes $K * L/B$ cycles

5 Virtual Cut Through (VCT)

1. Don't wait for entire packet to come
2. Takes $K + L/B - 1$ cycles
3. But need to ensure enough space for entire packet

5.1 Solution

1. Flow control at flit level
2. But more issues