

$$F/s + 3 - 1 \quad (N+k-1) \rightarrow \text{Yaff!}$$

1 Store and Forward



F = Size of packet

$L/R \rightarrow$ Transmission Delay

s bits per packet

k packets N links

k - Link

N - Packets

$$N \cdot k \cdot \frac{L}{R} + \frac{L}{R}$$

$$\frac{F}{s} \left(3 \cdot \frac{s+80}{R} + \frac{80+s}{R} \right)$$

$$\left(3 \frac{F}{s} + 3 \right) \frac{80+s}{R}$$

$$3 \left(\frac{s+80}{R} \right) + \left(\frac{F}{s} - 1 \right) \frac{s+80}{R}$$

$$3 \left(\frac{s+80}{R} \right) + \frac{F}{s} \left(\frac{s+80}{R} \right) - 1 \left(\frac{s+80}{R} \right)$$

$$2 \left(\frac{s+80}{R} \right) + \frac{F}{s} \left(\frac{s+80}{R} \right)$$

$$\frac{F}{s} \left(\frac{s+80}{R} \right)$$

$$\frac{F}{s} \left(\frac{s+80}{R} \right)$$

$$\frac{F}{s} \frac{80}{R}$$

$$-\frac{F 80}{s^2 R} = 0$$

$$0 \rightarrow 0 \rightarrow 0$$

$$0 \rightarrow 0 \rightarrow 0 \rightarrow 0 \quad \text{First Packet Arrives}$$

$$0 \rightarrow 0 \rightarrow 0 \rightarrow 0 \quad \frac{240+3s}{R} \quad (1)$$

$$0 \rightarrow 0 \rightarrow 0 \rightarrow 0 \quad \frac{1}{R} \quad (2)$$

$$0 \rightarrow 0 \rightarrow 0 \rightarrow 0 \quad (3)$$

$$0 \rightarrow 0 \rightarrow 0 \rightarrow 0 \quad (4)$$

$$0 \rightarrow 0 \rightarrow 0 \rightarrow 0 \quad (4)$$

$$0 \rightarrow 0 \rightarrow 0 \rightarrow 0 \quad \text{Last Packet Arrives}$$

Total of s

Optimum!

$$\frac{F}{s} + 2 \left(\frac{s+80}{R} \right)$$

$$\frac{F}{R} + \frac{F 80}{s R} + \frac{2s}{R} + \frac{160}{R}$$

$$-\frac{F 80}{s^2 R} + \frac{2}{R}$$

$$\frac{F 80}{s^2 R} = \frac{2}{R}$$

$$F 80 = 2s^2$$

$$\sqrt{F 40} = s^2$$