





What is the end-to-end packet delay in this store-and-forward subnet?

Assume:

All links: 2.5 km; C = 100Mbps; propagation speed = 200m/microsec.

queueing delay = processing delay = 0; packet size = 1000 bytes

Solution:

endtoend packet delay = 4 (equal hops) x link delay

link delay = PROC + QD + TRANS + PROP = 0 + 0 + transmission time +
propagation delay

$$\text{transmission time} = \frac{1000 \text{ bytes}}{100 \text{ Mbps}} = \frac{8 \times 10^3 \text{ bits}}{10^8 \text{ bps}} = 8 \times 10^{-5} = 80 \text{ microseconds.}$$

$$\frac{2500 \text{ m}}{200 \text{ m/ microsec}}$$

$$\text{prop delay} = \frac{2500 \text{ m}}{200 \text{ m/ microsec}} = 12.5 \text{ microseconds}$$

link delay = 92.5 microseconds

End-to-end subnet delay = 4 x 92.5 = 370 microseconds