

02:31

## TRANSMISSION DELAY

Time it takes to place the complete data packet on the transmission medium.

$$\text{Transmission Time} = \frac{\text{Message size}}{\text{Bandwidth}}$$

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## PROPAGATION DELAY

Time it takes for a bit to go from device A to device B.

The propagation time is calculated by dividing the distance by the propagation speed.

$$\text{Propagation Time} = \frac{\text{Distance}}{\text{Propagation speed}}$$

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## QUEUING DELAY

- ★ The third component in latency is the queuing time, the time needed for each intermediate or end device to hold the message before it can be processed.
- ★ The queuing time is not a fixed factor; it changes with the load imposed on the network.
- ★ When there is heavy traffic on the network, the queuing time increases.



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## PROCESSING DELAY

- ★ How much time the node takes to process the message?



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