



SNS COLLEGE OF ENGINEERING

Kurumbapalayam (Po), Coimbatore – 641 107

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Accredited by NBA – AICTE and Accredited by NAAC – UGC with 'A' Grade
Approved by AICTE, New Delhi & Affiliated to Anna University, Chennai



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING

COURSE NAME :19IT401 COMPUTER NETWORKS

II YEAR /IV SEMESTER

Unit 4-Transport layer

Topics 5 : TCP windows



TCP Windows



- TCP uses two windows (send window and receive window) for each direction of data transfer, which means four windows for a bidirectional communication.
- To make the discussion simple, we make an unrealistic assumption that communication is only unidirectional (say from client to server); the bidirectional communication can be inferred using two unidirectional communications with piggybacking.

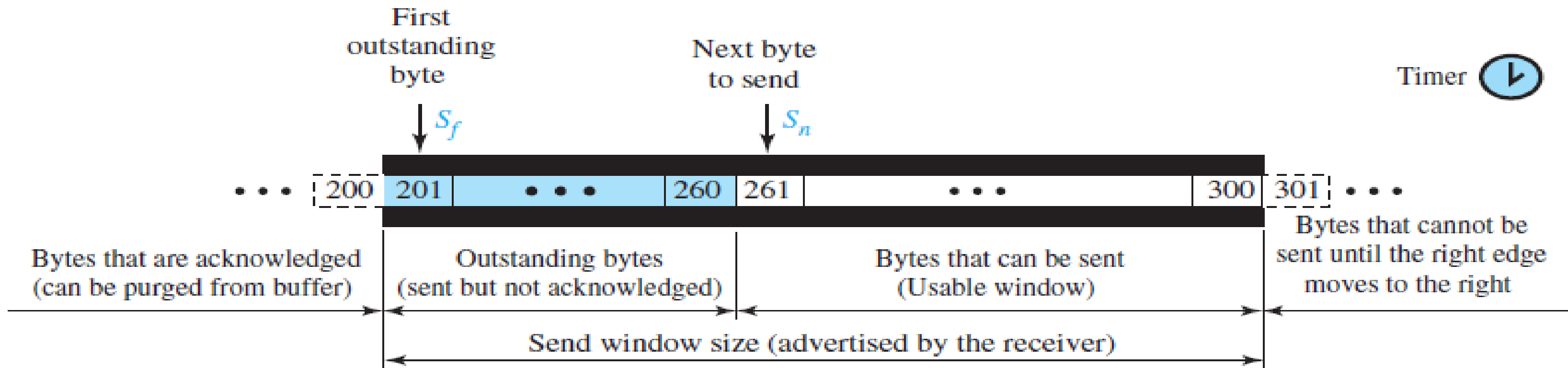


Send window



- ✓ Figure shows an example of a send window.
- ✓ The window size is 100 bytes, but later we see that the send window size is dictated by the receiver (flow control) and the congestion in the underlying network (congestion control).
- ✓ The figure shows how a send window *opens, closes, or shrinks*.

Send window in TCP



a. Send window



b. Opening, closing, and shrinking send window

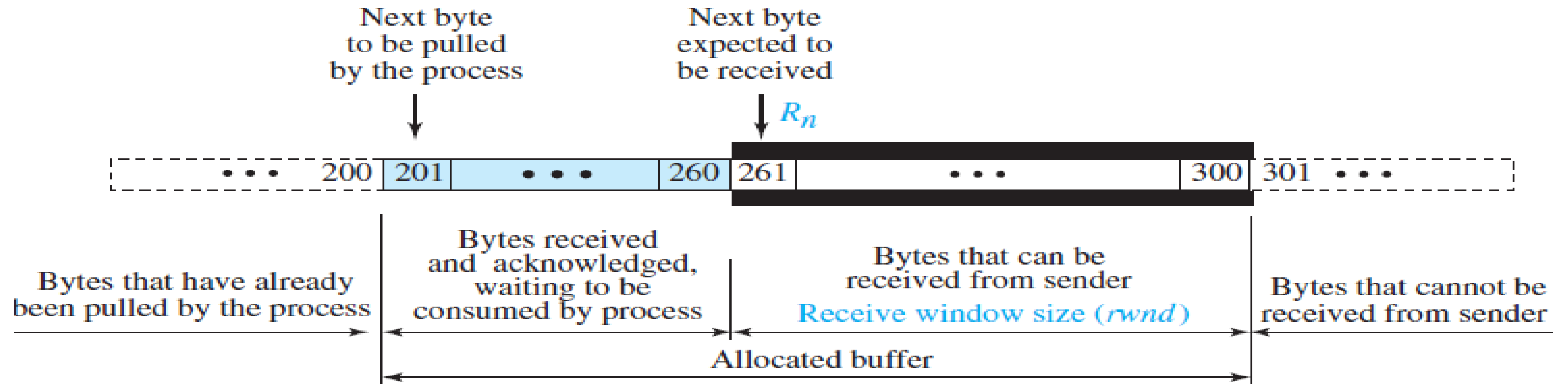


Receive Window

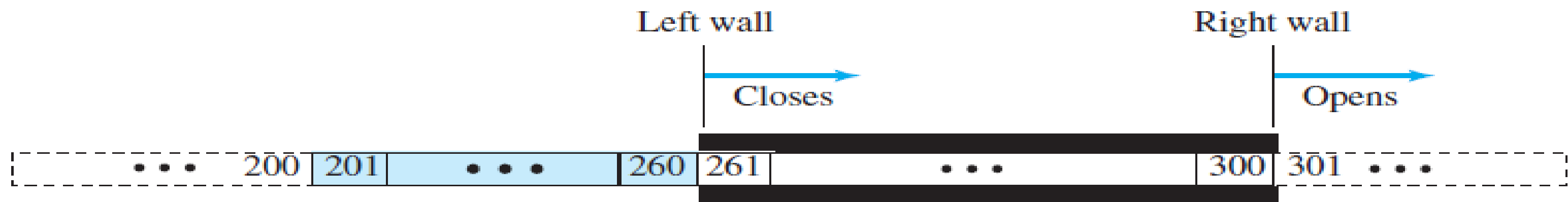


- ✓ Figure shows an example of a receive window.
- ✓ The window size is 100 bytes.
- ✓ The figure also shows how the receive window opens and closes; in practice, the window should never shrink.

Receive window in TCP



a. Receive window and allocated buffer



b. Opening and closing of receive window



Assessment



- a) What is receive window?
- b) What is send window?
- c) What is TCP window?





Reference



TEXT BOOKS

Behrouz A. Forouzan, Data Communications and Networking, Fifth Edition TMH, 2013.

REFERENCES

1. William Stallings, Data and Computer Communications, Tenth Edition, Pearson Education, 2013.
2. Andrew Tanenbaum, Computer Networks, Fifth Edition, Pearson (5th Edition) Education, 2013.
3. James F. Kurose, Keith W. Ross, Computer Networking, A Top-Down Approach Featuring the Internet, Sixth Edition, Pearson Education, 2013.
4. Larry L. Peterson, Bruce S. Davie, Computer Networks: A Systems Approach, Fifth Edition, Morgan Kaufmann Publishers Inc., 2012.