

01:53

STOP-AND-WAIT PROTOCOL

- ★ Stop – and – Wait protocol is data link layer protocol for transmission of frames over noiseless channels.
- ★ It provides unidirectional data transmission with flow control facilities but without error control facilities.
- ★ The idea of stop-and-wait protocol is straightforward.
- ★ After transmitting one frame, the sender waits for an acknowledgement before transmitting the next frame.

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02:58

PRIMITIVES OF STOP-AND-WAIT PROTOCOL

Sender side

Rule 1 : Send one data packet at a time.

Rule 2 : Send the next packet only after receiving ACK for the previous.

Receiver side

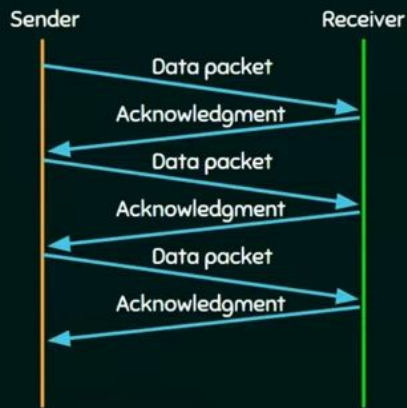
Rule 1 : Receive and consume data packet.

Rule 2 : After consuming packet, ACK need to be sent (Flow Control).

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03:42

STOP-AND-WAIT PROTOCOL

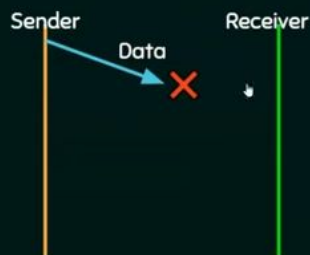


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05:01

PROBLEMS OF STOP-AND-WAIT PROTOCOL

1. Problems due to lost data.
 - ★ Sender waits for ack for an infinite amount of time.
 - ★ Receiver waits for data an infinite amount of time.

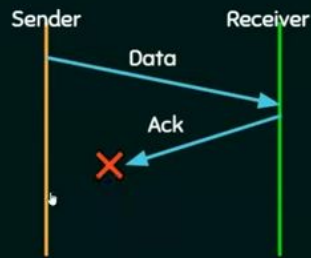


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05:31

PROBLEMS OF STOP-AND-WAIT PROTOCOL

2. Problems due to lost ACK.
 - ★ Sender waits for an infinite amount of time for ack.



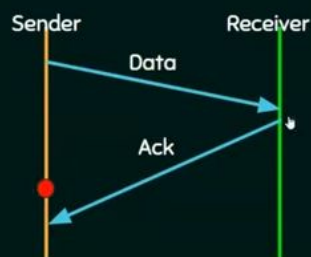
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06:11

PROBLEMS OF STOP-AND-WAIT PROTOCOL

3. Problems due to delayed ACK/data.

- ★ After timeout on sender side, a delayed ack might be wrongly considered as ack of some other data packet.



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06:58

PROBLEMS OF STOP-AND-WAIT PROTOCOL

1. Problems due to lost data.

Sender waits for ack for an infinite amount of time.

Receiver waits for data an infinite amount of time.

2. Problems due to lost ACK.

Sender waits for an infinite amount of time for ack.

3. Problems due to delayed ACK/data.

After timeout on sender side, a delayed ack might be wrongly considered as ack of some other data packet.

