LOG JARINGAN KOMUNIKASI DATA – WEEK 05

TCP ACK Generation

Rule 1

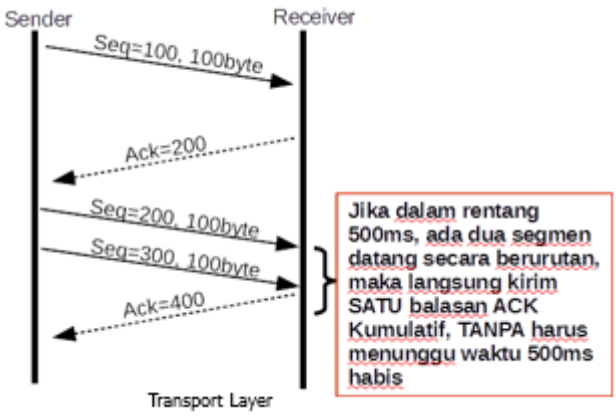
Event at receiver: arrival of in-order segment with expected seq #. All data up to expected seq # already ACKed

TCP receiver edition: delayed ACK. Wait up to 500ms for next segment. If no next segment, send ACK.

Rule 2

Event at receiver: arrival of in-order segment with expected seq #. One other segment has ACK pending.

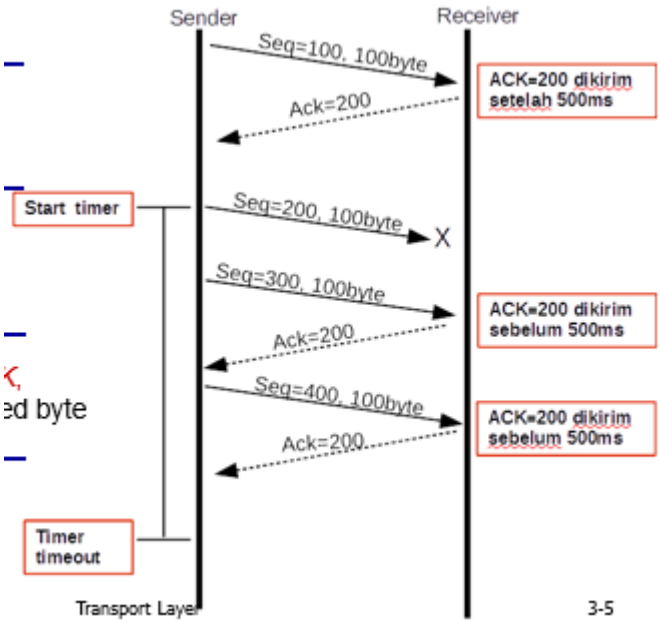
TCP receiver edition: immediately send single cumulative ACK, ACKing both in-order segments.



Rule 3

Event at receiver: arrival of out-of-order segment higher-than-expect seq. #. Gap detected.

TCP receiver edition: immediately send duplicate ACK, indicating seq. # of next expected byte.

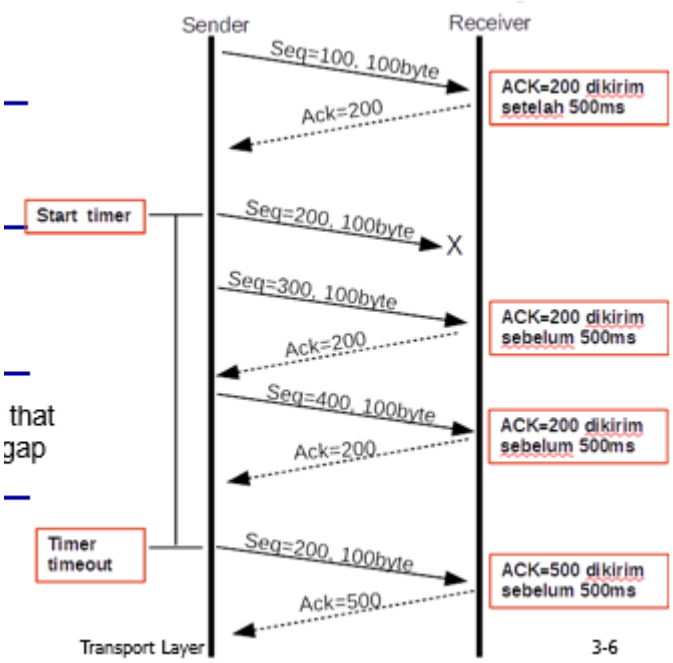


ACK yang sama dikirim selama seq = 200, 100 byte belum diterima

Rule 4

Event at receiver: arrival of segment that partially or completely fills gap.

TCP receiver edition: immediate send ACK, provided that segment starts at lower end of gap.



Jika seq=200, 100 byte berhasil diterima, ACK kumulatif yang menandakan seq terakhir dikirim dan berhasil diterima.

Contoh Soal

Diketahui dua host (client dan server) berkomunkasi dengan protocol TCP (RFC 1122, RFC 2581). Waktu tempuh dari host A ke B atau sebaliknya adalah 20ms. Buatlah satu diagram komunikasi host A dan host B yang memenuhi aspek berikut. (Time out = 2000)

a. Proses handshake host A dan host B. Inisiasi handshake dilakukan pada pada t=0

b. Proses transmisi data dari host A dan B dengan rincian sebagai berikut:
   - Saat t=80 host A mengirim segmen seq=200 sebanyak 20 bytes
   - Saat t=100 host A mengirim segmen seq=220 sebanyak 20 bytes
   - Saat t=200 host A mengirim segmen seq=240 sebanyak 20 bytes tetapi hilang di perjalanan (loss)
   - Saat t=300 host A mengirim segmen seq=260 sebanyak 20 bytes tetapi hilang di perjalanan (loss)
   - Saat t=400 host A mengirim segmen seq=280 sebanyak 20 bytes
   - Saat t = 900 host A mengirim segmen seq=260 sebanyak 20 bytes
   - Saat t = 1100 host A mengirim segmen seq=240 sebanyak 20 bytes
   - Saat t = 1200 host A mengirim segmen seq=300 sebanyak 20 bytes
   - Saat t = 1300 host A mengirim segmen seq=320 sebanyak 20 bytes, tetapi ACK balasan dari host B hilang di perjalanan (loss).
   - Saat t = 1301 host A mengirim segmen seq=340 sebanyak 20 bytes.

c. Proses closing setelah mengerjakan pengiriman paket di atas. Closing dilakukan pada saat t=2400

Jawaban: