Performance
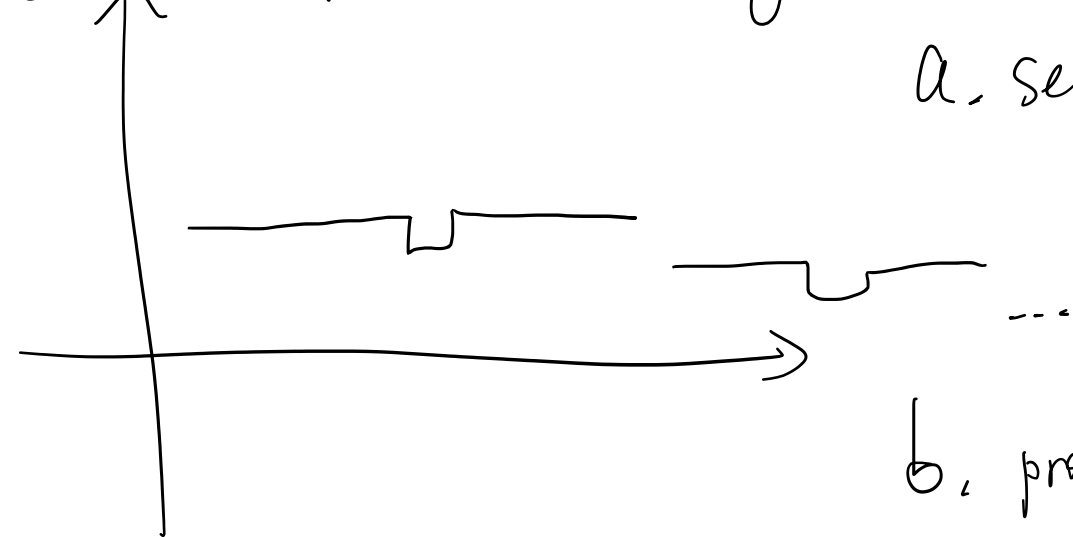
① ping of 100 kB. Ping means sending the RPC result back.

a. send time $= 100\,kB / 1\,Gbps$

$$= \frac{100 \times 10^3 \times 10}{10^9}\,s = 10^{-3}\,s = 1\,ms$$

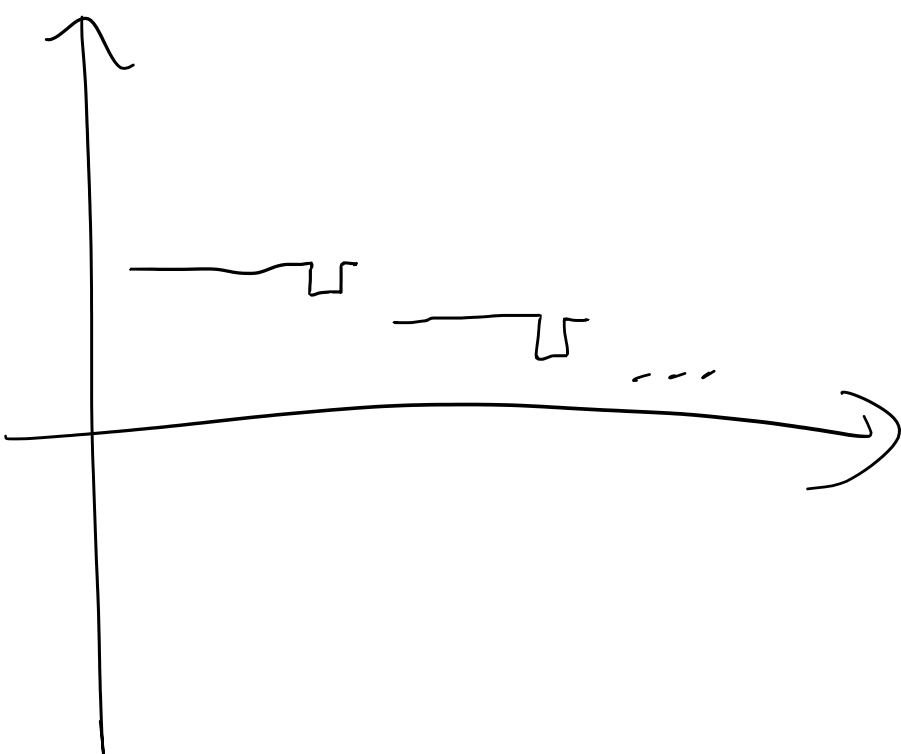b. process time $= 6$ rounds $\times \dfrac{100\,kB}{6780\,MB/s}$

$$= 6 \times \frac{100 \times 10^3}{7 \times 10^3 \times 10^6}\,s$$

$$= 10^{-4}\,s = 100\,us$$

c. send response back $=$ send time $= 1\,ms$

② writes of 1 MB. Write means responses of about 100 bytes

a. sent time $= \dfrac{1\,MB}{1\,Gbps}$

$$= \frac{10^6 \times 8}{10^9} = 10^{-2}\,s = 10\,ms$$

b. process time $= 7$ rounds $\times \dfrac{1\,MB}{6780\,MB/s}$

$$= 100 \times 10 = 1\,ms$$

c. send response back $= \dfrac{100\,bytes}{1\,Gbps}$

$$= \frac{100 \times 8}{10^9} = \frac{10^3}{10^9}\,s = 10^{-6}\,s$$

$$= 1\,us$$

Let's say 1us to 10 us,
based on the empirical overhead
the book shows.

③ Reads of 1 MB. 100 bytes requests and 1 MB response.
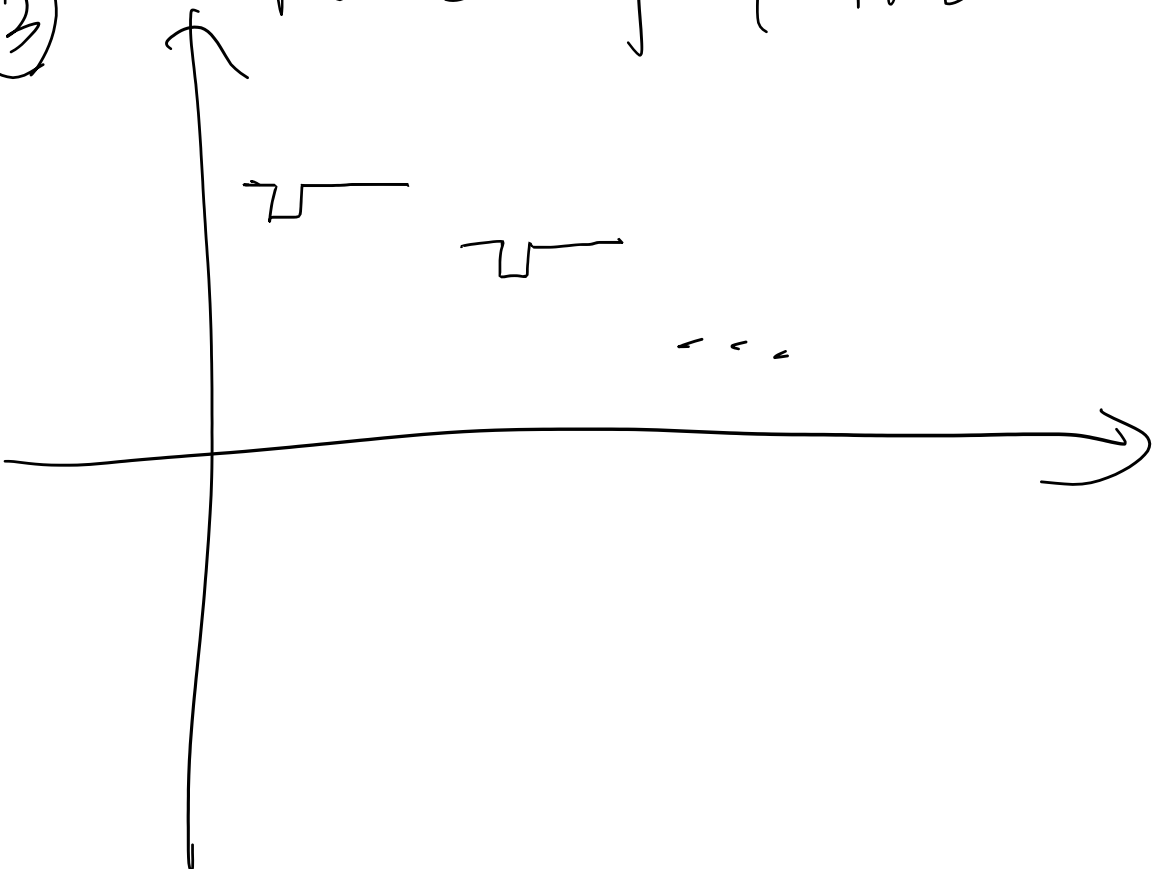
a. sent time $= 1 \sim 10$ us.

b. process time $=$

NFC	kernel buf	User buf	Value string	Data struct
RW	RW	R		

$$= 5 \times \frac{1\,MB}{6780\,MB/s} = 0.7\,ms \sim 0.9\,ms$$

I don't think the compiler will optimize it to 5.

c. send response back $= \dfrac{1\,MB}{1\,Gbps} = 10\,ms$