

Increasing Maximum Window Size of TCP draft-nishida-tcpm-maxwin-01

Yoshifumi Nishida

Hirochika Asai

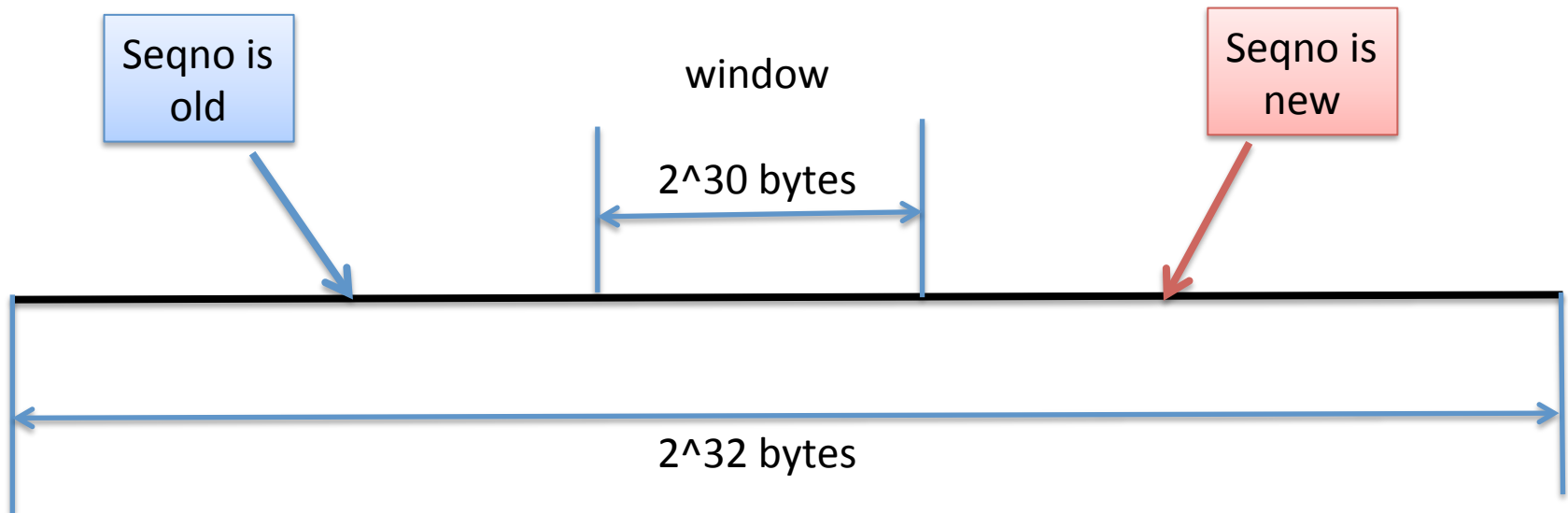
Background

- Current maximum window size
 - $2^{30} - 2^{14}$ (1,073,725,440) Bytes
 - Defined in RFC7323
 - Looks too conservative?
 - Max TCP seq num is $2^{32}-1$
 - Max window size is almost 1/4 of max seqno

Logics in RFC7323

By limiting maxwin size to 2^{30} order, it can successfully tell whether arrived sequence number is old or new.

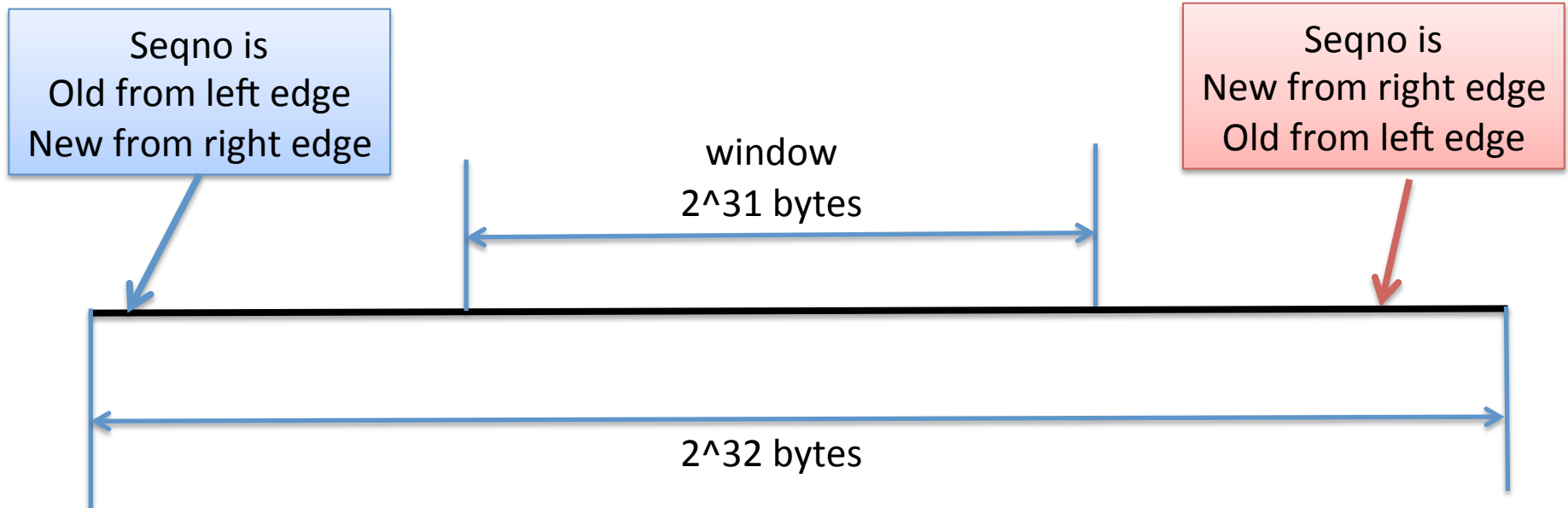
(You cannot do this if maxwin size is 2^{31} order)



Increasing MaxWin

If we increase maxwin size to 2^{31} order, it cannot tell whether arrived sequence number is old or new.

But, it still can tell whether the seqno is inside window or not!



Proposal

- Increase max shift count is window scale option
 - Use 15 as max shift count
 - New maximum window size will be $2^{31}-2^{15}$ bytes
 - Sender only updates (you can update both side, but not mandatory)
 - No signaling, no option is required

Rationales

- Can be beneficial for very long-fat-pipe
- We sometime see similar questions about maxwin from time to time
 - TCPM is the place to provide the answer
- Even if we extend seqno space and max window size later (e.g. 64bits seqno), the same question will still remain
 - Maxwin is 63bits or 62bits?
- It might affect other protocol design

Questions?

Please read the draft for more detailed info