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

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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