Quiz

Q1 . A transport layer protocol implements timer to address the loss problem. The timer cannot expire if there is no loss. True or False?

Q2 . A reliable transport protocol must implement both ACK and NAK if it wants to address bit errors as well as packet loss problems. True or False?

Q3 . Stop-and-Wait:

A. receiver buffers packets

B. has only 1 bit for the sequence number

C. requires a large sequence number space

D. requires more than 1 bit for the sequence number

Q4 . Stop-and-Wait cannot provide reliability. True or False?

Q5 . For short distances, Stop-and-Wait is always efficient, but it fails to support high throughput only when the distance between the client and server is large. True or False?

Q6 . Pipelining increases throughput (compared to stop-and-wait) linearly with the window size (number packets the sender can have in the pipeline without having to stop and wait for the ACK). True or False?

Q7 . In Go-Back-N, the sender window cannot be equal to the sequence number space. True or False?

Q8 . For a 4-bit sequence number field in the packet header, the maximum possible window size for Selective Repeat is

A.15

B.16

C. 8

D. 7

Q9 . To speed up file transfers, a Selective Repeat implementation is using a window size of 8. The sequence number field in the packet header must be at least

A. 8-bit long

B. 4-bit long

C. 3-bit long

D. 16-bit long

Resource created 2 months ago (Wednesday 04 September 2019, 06:45:29 PM), last modified 17 days ago (Thursday 03 October 2019, 09:38:17 PM).

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Nadeem Ahmed (/users/z3003139) 5 days ago (Tue Oct 15 2019 18:53:47 GMT+1100 (澳大利亚东部夏令时间))

Solution:

1: False

2: False

3: B

4: False

5: False

6: True

7: True

8: C

9: B

Reply

Xiaohao Zhou (/users/z5198368) a day ago (Sat Oct 19 2019 13:43:53 GMT+1100 (澳大利亚东部夏令时间)), last modified a day ago (Sat Oct 19 2019 13:45:46 GMT+1100 (澳大利亚东部夏令时间))

Q7,

Can N lagerer than 1/2 sequence# and smaller than sequence#?

Reply

Salil Kanhere (/users/z3116703) a day ago (Sat Oct 19 2019 14:47:17 GMT+1100 (澳大利亚东部夏令时间)), last modified a day ago (Sat Oct 19 2019 14:47:26 GMT+1100 (澳大利亚东部夏令时间))

This is explained in this thread below. Is that explanation not sufficient ?

Reply

Jiahui Luo (/users/z5158415) 3 days ago (Thu Oct 17 2019 12:30:45 GMT+1100 (澳大利亚东部夏令时间))

Can you explain about q8 and q9? I try to use window size <= 1/2 sequence number, but can't get the answer.

Reply

Salil Kanhere (/users/z3116703) 3 days ago (Thu Oct 17 2019 16:59:24 GMT+1100 (澳大利亚东部夏令时间)), last modified 3 days ago (Thu Oct 17 2019 16:59:35 GMT+1100 (澳大利亚东部夏令时间))

Sequence # space = 16 (for 4 bit sequence numbers), if windows size <= 1/2 sequence # space then the answer for Q8 is C. You can use the same logic for Q9.

Reply

Matthew Immanuel (/users/z5187551) about 8 hours ago (Sun Oct 20 2019 14:22:02 GMT+1100 (澳大利亚东部夏令时间))

Can you please explain how did you get 16?

"Sequence # space = 16 (for 4 bit sequence numbers)"

Reply

Salil Kanhere (/users/z3116703) about 6 hours ago (Sun Oct 20 2019 16:38:53 GMT+1100 (澳大利亚东部夏令时间))

0000, 0001, ... 1111 -> 16 sequence #s

Reply

Saloni Goda (/users/z5215272) 2 days ago (Fri Oct 18 2019 15:13:26 GMT+1100 (澳大利亚东部夏令时间)), last modified 2 days ago (Fri Oct 18 2019 15:13:34 GMT+1100 (澳大利亚东部夏令时间))

For Q8, if its 4 bits then half of 15 is 7.5 so won't the answer be <= 7.5 (ie 7 which is option D)

Reply

Salil Kanhere (/users/z3116703) 2 days ago (Fri Oct 18 2019 15:19:45 GMT+1100 (澳大利亚东部夏令时间))

the sequence # space = [0, ... 15] so total 16 #s.

Reply

Chan Kwon Kim (/users/z5204743) 4 days ago (Wed Oct 16 2019 16:32:15 GMT+1100 (澳大利亚东部夏令时间))

in go back N, would the minimum allowed seq # be 1 more than the window size?

Reply

Nadeem Ahmed (/users/z3003139) 4 days ago (Thu Oct 17 2019 00:06:38 GMT+1100 (澳大利亚东部夏令时间))

In GBN, sender window size should be less than 2^n, where n is the number of bits in the sequence number space (cannot be equal). Think of a scenario when setting the sender window size = size of the sequence number space would cause an issue.

Reply

Chan Kwon Kim (/users/z5204743) 4 days ago (Wed Oct 16 2019 16:17:25 GMT+1100 (澳大利亚东部夏令时间))