

Blocking probability increases with the No. of clients?

question posted 15 days ago by [gmikawa](#)

According to the graph in this video clip, blocking probability is increasing with the No. of clients. The question under the previous video, the last statement was wrong. May I ask you why it was? It seems controversial.

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1 response

iamigo (Staff)

15 days ago



Hello Gmikawa,

The graph in the video shows that the blocking probability increases with the load of the system (i.e. the traffic intensity, ρ). As we have seen in the calculations, the blocking probability is obtained directly from the probability of the system (M/M/C/C) being at state C (i.e. C clients in the system).

Does this answer your question?

Isabel

Thank you, Isabel.
Blocking probability is increasing with the load (bottom horizontal axis) and also increasing with C (top horizontal axis) in the graph, isn't it? So the last statement in the question week 5, lesson 2 seems correct i.e. the blocking probability increases with C . But I think each line of the graph is drawn with fixed C , thus I need to fix ρ and compare the blocking probability and C . i.e. the blocking probability is decreasing with increasing C . This is intuitively more acceptable. And I should keep in mind that C is the clients served, no waiting clients in the system.

posted 15 days ago by [gmikawa](#)

In the graph, we have Erlang B formula plotted for several number of servers. For a same load, given an $M/M/C/C$ system and an $M/M/C'/C'$ one, with C greater than C' , then blocking probability in the first system is smaller than blocking probability in the second system. So your statement "The blocking probability is decreasing with increasing C " is true.

Just be careful, in an $M/M/C/C$ system, C is the number of servers in the system and also the capacity of the system (not the number of clients served). In other words, there is no buffer, so the *maximum* number of clients that can be in the system at the same time is equal to the number of servers, thus to C .

Finally, note that the last statement in week 5 lesson 2's question says "It increases with the number of clients in the system", so it does not refer to C (the number of clients in the system can be any from 0 to C).

posted 15 days ago by [iamigo](#)(Staff)