Assignment_2

Due on 2019-03-01 22:00 GMT

Course outline

Unit 3 - Week 2 - Call congestion and time congestion; Lee's approach, Karnaugh's approach

Assessment 2

For a M/M/1 queue, the probability of the whole switch being busy is given by:

\[ P_b = \frac{\lambda^n}{n!} \sum_{k=0}^{n} \frac{\lambda^k}{k!} \]

where \( \lambda \) is the arrival rate and \( n \) is the number of servers.

a) What is the condition for a computer M/M/1 switch to be non-blocking?

N > M

b) A switch is a non-blocking switch.

The switch always has a path available.

5 points

6) A two stage network with M/M/1, e.g., the input stage, what is the probability that the middle link is busy?

Let \( P_{1} \) be the probability that the first stage is busy and \( P_{2} \) be the probability that the second stage is busy.

\[ P_{2} = P_{1} \times (1 - P_{2}) \]

For three stage network where each link is a M/M/1, what is the probability that the link is busy?

\[ P_{3} = P_{1} \times P_{2} \times (1 - P_{3}) \]

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