Transient Solution of an M/M/c Queue with Heterogeneous Servers and Balking

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Abstract

This paper analyses a multi-channel Markovian queueing system with heterogeneous servers and balking behaviour. For the system initiated with a random number of customers, the transient solution for the system size distribution is obtained explicitly in a direct way and the steady state probabilities are deduced. Some special cases are also discussed for the case of single server and two server models.

Keywords: System Size, Almost Lower Triangle, Balking, Heterogeneous Servers, Steady State Probabilities.