

# A Queueing Model of General Servers in Tandem with Finite Buffer Capacities

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**Abstract**—We consider a queueing model with finite capacities. External arrivals follow a Coxian distribution. Due to the limitation of the capacity, arrivals may be lost if the buffer is full. Our goal is to study the probability of blocking. In order to obtain the steady-state probability distribution of this model, we construct an embedded Markov chain at the departure points. The solution is solved analytically and its analysis is extended to semi-Markovian representation of performance measures in queueing networks.

**Keywords**—Queueing Networks, Probability Distribution, Embedded Markov Chain.

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