STATIONARY ANALYSIS OF THE SHORTEST QUEUE POLLING MODEL

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We consider a two-node polling model in which customers upon arrival join the shorter of two queues. Customers arrive according to a Poisson process and the service times in both nodes are independent and identically distributed random variables having the exponential distribution. The two-dimensional process of the numbers of customers at the queue where the server is and at the other queue is a two-dimensional Markov process. We derive its equilibrium distribution using two methodologies: the compensation approach and a reduction to a boundary value problem.