

REVIEW PROBLEMS No. 17

Textbook: Problems 18.1, 18.2

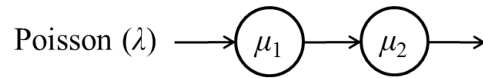


Figure 1: Two servers in tandem.

Problem S17.1 Consider the system of Fig. 1, consisting of two single server facilities in tandem with service rates μ_1 and μ_2 , respectively. Neither facility has a waiting room. Does this system admit a product form limiting distribution, *i.e.*, the number of jobs at server 1 is independent of the number of jobs at server 2. Whether yes or no, justify your answer. **Hint:** construct a Markov chain representation for the system and solve for its limiting distribution.