

ESERCIZIO 1: Consider a stable M/G/1 system. Complete the following tasks:

1. for a given arrival rate λ and for a given average service time b , show under what condition(s) the average number of packets in the system reaches the minimum.

2. for such a system calculate the stationary state probabilities π_0 , π_1 e π_2 ;

Assume now that the above system models a router with an output telecommunication line characterized by a transmission speed of C bit/sec.

3. If packets arrive at the router with a rate of $\lambda = 10$ packets/sec, and if each packet has a constant length L of 100 bit, calculate C so that the average number of packets in the system is equal to 5.

