

Otra Presentacion más

Fede

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1 M/M/2

banco con dos cajeros. arribos $\lambda = 20$ cli/h, servicio: $\mu = 30$. Encontrar E(n) y E(t)

1.1 RTA

1.1.1 encontrar L o E(n)

$$\begin{aligned}\rho &= \frac{\lambda}{2 * \mu} \\ \rho &= \frac{20}{2 * 30} = \frac{20}{60} = 0,33 \\ P_0 &= (1 - \rho) / (1 + \rho) = \frac{2/3}{4/3} = \frac{1}{2} \\ L_q &= \frac{P_0 * (\lambda / \mu)^c * \rho}{c! (1 - \rho)^2} \\ L_q &= \frac{\frac{1}{2} * \frac{20^2}{30^2} * \frac{1}{3}}{2 * \frac{2^2}{3}}\end{aligned}$$

$$L_q = \frac{\frac{1}{2} * \frac{4}{9} * \frac{1}{3}}{\frac{8}{9}} = \frac{1}{12}$$

$$L = L_q + \frac{\lambda}{\mu}$$

$$L = \frac{1}{12} + \frac{2}{3}$$

$$L = \frac{9}{12} = 0.75$$

1.1.2 E(t) sin usar little

$$W_q = \frac{L_q}{\lambda} = \frac{\frac{1}{12}}{\frac{1}{20}} = \frac{1}{240}$$

$$W = W_q + \frac{1}{\mu}$$

2 MD1

$$\lambda = 6000 \quad \mu = 8000 \quad \frac{\lambda}{\mu} = 1$$

2.1 RTA

2.1.1 Encontrar E(n)

2.1.2 Encontrar E(T)

3 Colas con prioridades

en servicio hay clase 2(2min) y hay

$$\begin{cases} Clase1 - > 2personas \\ Clase2 - > 3personas \end{cases}$$

3.1 RTA

1. $T_q = 2 \text{ min} + (2 * 8 \text{ min}) = 18 \text{ min.}$
2. $T = T_q + 8 \text{ min} = 26 \text{ min.}$