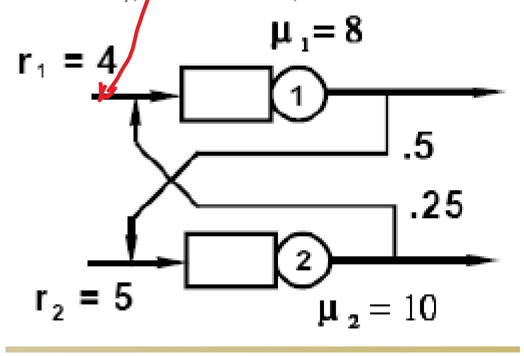
Wednesday, November 12, 2014 12:03 PM



$$E[T^{(1)}] = 1/(\mu_1 - \lambda_1) + E[T^{(2)}]/2$$

$$E[T^{(2)}] = 1/(\mu_2 - \lambda_2) + E[T^{(1)}]/4$$

$T^{(1)}$ → serive in queue 1 in the first step

$\frac{1}{\mu_1 - \lambda_1}$

\+ service time in remaining steps

$0 \times \frac{1}{2} + \frac{1}{2} \times E[T^{(2)}]$

$$E[T] = E[T^{(1)}] \cdot \frac{4}{9} + E[T^{(2)}] \cdot \frac{5}{9}$$

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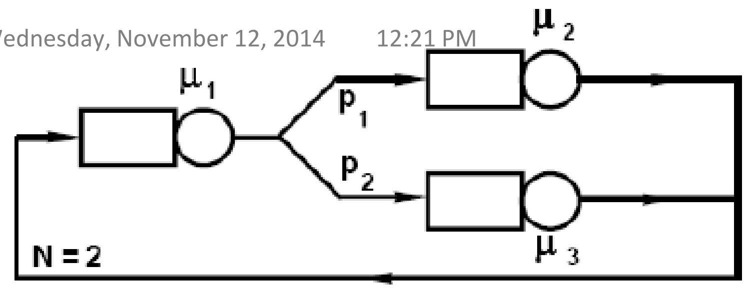
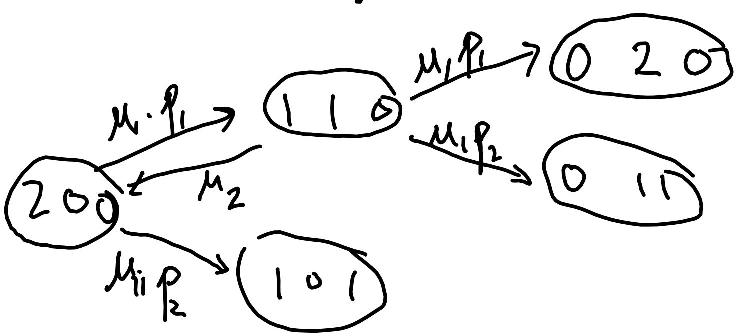


$P_{12} = p_1$ $\quad$ $p_1 + p_2 = 1$

$P_{13} = p_2$ $\quad$ $P_{23} = 0$ $\quad$ $P_{21} = 1$

define $V_1 = 1$, $\quad V_2 = p_1$, $\quad V_3 = p_2$

if we define $V_2 = 1$, then $V_1 = \frac{1}{p_1}$



open QN

$\rho_i = \frac{\lambda_i}{\mu_i}$

$$P(N_1 = n_1, N_2 = n_2, \ldots, N_k = n_k) = \prod_{i=1}^{k} (1-\rho_i)\rho_i^{n_i},$$

closed QN

$$\pi(\vec{n}) = \frac{1}{G(N)} \prod_{i=1}^{M} \left(\frac{v_i}{\mu_i}\right)^{n_i} \quad \vec{n} \geq \vec{0}; \sum_{i=1}^{M} n_i = N$$

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exp. λ

$$T = -\ln(1-U)/\lambda$$

inter-arrival time