

Current situation

$$c=2, P_b = .99, P_b = \frac{\lambda}{c\mu} = \frac{\lambda}{2\mu} \therefore \frac{\lambda}{\mu} = 1.98$$

Add a 3rd server

$$c=3, P_b = \frac{\lambda}{3\mu} = \frac{1}{3}(1.98) = .66$$

Low priority stuff now takes up time

$$\mu' = .8\mu$$

$$c=3$$

$$P_b = \frac{\lambda}{3\mu'} = \frac{\lambda}{3(.8)\mu} = \frac{1}{3(.8)}(1.98) = .825$$

Alternative \rightarrow more RAM

$$\mu' = 1.25\mu$$

$$c=2$$

$$P_b = \frac{\lambda}{2(1.25)\mu} = \frac{1}{2(1.25)}(1.98) = .792$$