Behaviors of Markov-Modulated Bernoulli Switches

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Hypotheses

The switch network will reach equilibrium, and the mean of the following observable variables will follow a trend of...

1. Linear ($\lambda_n$)
   - Total Queue Length
   - Schedule's Weight
   - Number of Non-Empty VOQs

2. Logarithm ($\ln(n)$)
   - Clearing Time

3. Constant (1)
   - Length of Maximum Virtual Output Queue

Virtual Output Queues for Queue n

<Switch Network System with VOQs>

<Hungarian Algorithm – O(n^3)>

Traffic Intensity = $\rho = \frac{\lambda}{\mu}$

<Markov Property>

Future Objectives

Simulation Optimization

Progress

GitHub

Reference