

## Response time of a storage system

The storage system of a small company is composed by two NAS. Each of them is configured to serve requests in parallel (i.e. processor sharing), and serves two type of users: employees and costumers. Requests of both type of users arrive according to Poisson processes respectively of rates:

$$\lambda_E = 0.1 \text{ req./s.} \quad \lambda_C = 10 \text{ req./s.}$$

Each request accesses files from both NAS. The demand of the two NAS for the two types of users have been measured as follows:

$$D_{1A} = 2 \text{ s.} \quad D_{1B} = 0.06 \text{ s.}$$

$$D_{2A} = 5 \text{ s.} \quad D_{1B} = 0.04 \text{ s.}$$

Determine:

1. If the considered system is stable
2. The utilization of the two NAS
3. The residence time of the two NAS
4. The system response time