

03.The Importance of Workload Characterization

We want to see the throughput and the response time of the system as they represent a decision factor for the consumer and the producer.

Focus on Open Systems

You measure the system and get the description of the arrival, service time of the system and from them you compute the response time. With this we can improve the arrival rate of the system. However determine the balance between response time and service time is not trivial.

Focus on Arrivals

They describe how jobs enter the system. Related with the inter-arrival time. The utilization $U = \lambda S$ should always be less than 1.

Now we consider the arrival rate: if we maintain the arrival rate constant but we change the service time. If inter-arrival and service time are deterministic jobs never queue and we can easily determine the required performance indices:

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An non-deterministic arrival time and service time create queues.