Computation efficiency of master-slave processors in multitasking applications: a performance analysis

ABSTRACT

Examines the computational efficiency of the master slave Multiple processor architectures system by considering a system consisting of a master M and p slave processors. The system performance is found by modelling it as a Markov process and a new method presented for computing the steady-state performance by dividing the state space into an interior and boundary space. The throughput of the system is then compared with that of a cost equivalent single processor using different values for the well-known Grosch parameter. It is demonstrated that the system is computationally efficient only for a sufficiently large number of jobs.

Keyword: Multiprocessor systems; Closed queuing systems