Abstract

The ready queue processing time estimation problem appears when many processes remain in the ready queue just before the occurrence of sudden failure of system. The system administrator has to decide immediately, how much further time is required to process the remaining jobs in the ready queue, before shutting down the entire system as precautionary measure, so that while restart, it may remain in the safe state. In lottery scheduling, this prediction is possible with the help of sampling techniques. Factor-Type estimation method, existing in literature of sampling, was used by many authors to predict the time required provided the highly correlated sources of auxiliary information are available. This paper suggests two new estimation methods to predict the remaining total processing time required to process completely the ready queue provided sources of auxiliary information are negatively correlated. Under this approximation, the bias and m. s. e of the proposed estimators have been obtained using the set up of random sampling applicable to lottery scheduling. Performance of both estimation methods are compared in terms of mean squared error. The confidence intervals are calculated for comparing the efficiency of the estimate. One proposed estimator found better over other.
References

Estimation of Ready Queue Processing Time using Transformed Factor-Type (T-F-T) Estimator in Multiprocessor Environment


Index Terms

Computer Science
Parallel Computing

Keywords
Lottery Scheduling
Transformed Factor-Type (T-F-T) Estimator
Mean Squared Error (M. S. E)
Variance
Confidence Intervals