Abstract

To make effective job placement policies for a volatile large scale heterogeneous system or in grid systems, scheduler must consider the job execution time. In most grid schedulers, execution time of job is to be known in the prior. The execution time given by user may not be more precise, execution time predictors are used in order to facilitate the dynamic scheduling. The prediction algorithms use analytical benchmarking/code profiling, historical data, and code analysis. The prediction algorithm should be nonclairvoyant in nature. This study reviews execution time prediction algorithms in a different perspective. This algorithm considers memory accessing, network performance, and fluctuation of competing CPU load and so on, as interference factors for prediction. Based on the understanding comprehensive analysis is made among them.

References

Anatomy Study of Execution Time Predictions in Heterogeneous Systems


- www.globus.org

- Hui Li, Performance Evaluation of grid computing a model and prediction perspective, Seventh IEEE International Symposium on Cluster Computing and the Grid (CCGRID’07)


Anatomy Study of Execution Time Predictions in Heterogeneous Systems

- Emmanuel Jeannot, Keith Seymour, Jack J. Dongarra, and Asym Yarkhan, Improved runtime and transfer time prediction mechanisms in a network enabled servers middleware, Parallel Processing Letters, World Scientific Publishing Company, January 2006
- Dan Tsafrir, Yoav Etsion, and Dror G. Feitelson, Backfilling Using System-Generated Predictions Rather than User Runtime Estimates, IEEE Trans. on Parallel And Distributed Systems, Vol. 18, No. 6, June 2007
- David Talby Dan Tsafrir Zviki Goldberg Dror G. Feitelson, Session-Based, Estimation-less, and Information-less Runtime Prediction Algorithms for Parallel and Grid Job Scheduling, Technical Report, school of computer science and Engineering, Hebrew University of Jerusalem 2006

Index Terms
- Computer Science
- Distributed Computing

Keywords
- Task Scheduling
- Historical Data
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- Profiling
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