International J. of Math. Sci. & Engg. Appls. (IJMSEA) ISSN 0973-9424, Vol. 3 No. IV (2009), pp. 289-304

TASK ALLOCATION MODEL FOR OPTIMAL UTILIZATION OF PROCESSOR'S CAPACITY IN DISTRIBUTED SYSTEM

HARENDRA KUMAR, M. P. SINGH AND PRADEEP KUMAR YADAV

Abstract

In a distributed system, all the processors for inter-processor communication share the single communication channel. The total processing time of a program whose execution is distributed among several processors is has equal to the sum of processors and communication times, which are function of the amount of data transmitted. An optimal assignment is a distribution of the tasks that has lowest total execution time. The model discussed in this paper provides an optimal solution for assigning a set of "m" tasks to a set of "n" processors where m n, in such a way that allocated load on all processors is balanced according to the relative speed.

Key Words and Phrases: Distributed system, Response Time, Inter-task communication, Execution time, Task allocation.